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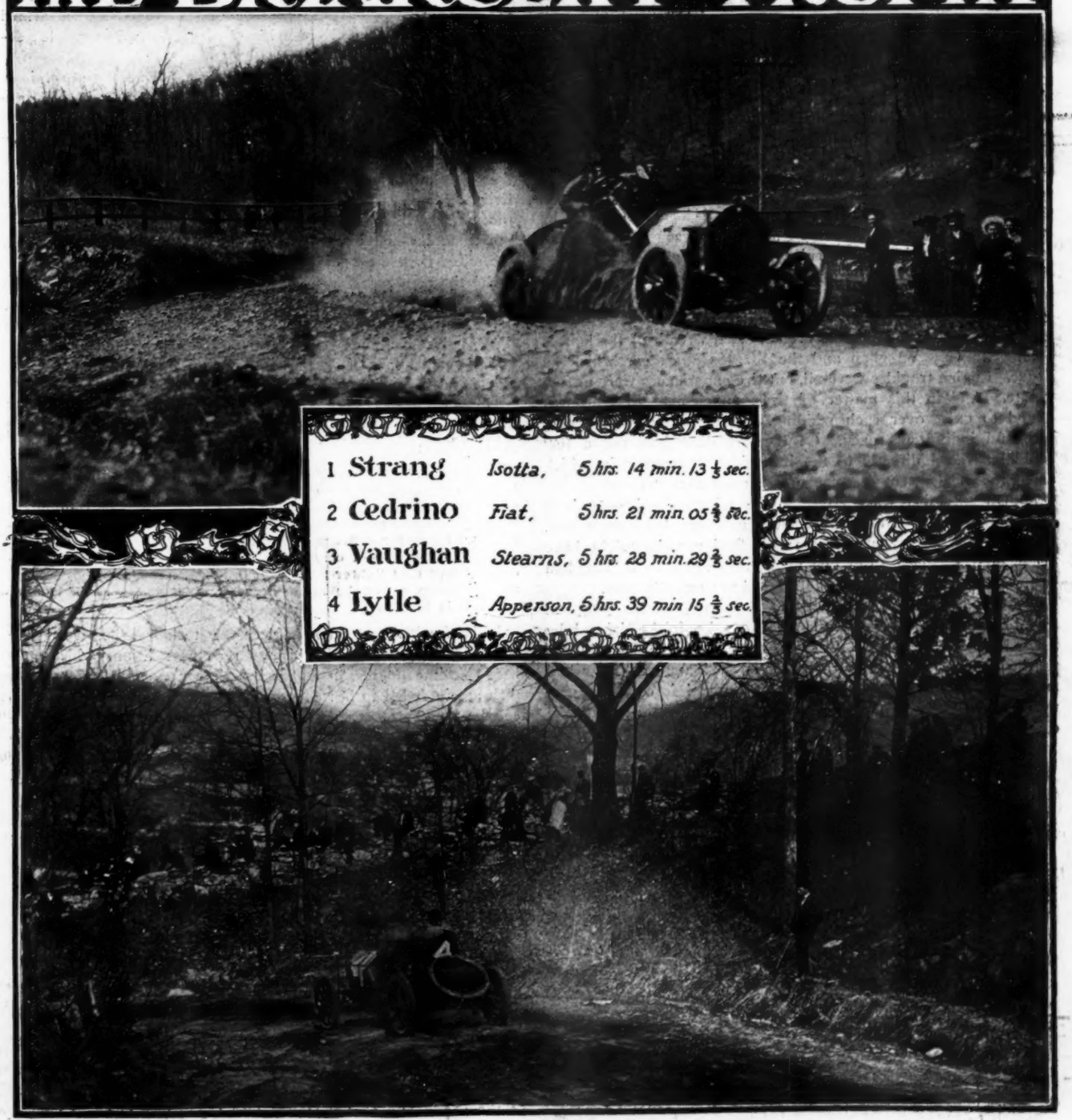
THE AUTOMOBILE

THE BRIARCLIFF TROPHY


1 Strang Isotta, 5 hrs. 14 min. 13 1/5 sec.
2 Cedrino Fiat, 5 hrs. 21 min. 05 3/5 sec.
3 Vaughan Stearns, 5 hrs. 28 min. 29 2/5 sec.
4 Lytle Apperson, 5 hrs. 39 min 15 3/5 sec.

Strang Taking a Turn Without Hesitation, and Cautiously Descending a Corkscrew Grade.

BRIARCLIFF WAS HARD-FOUGHT AND SPECTACULAR

By A. G. BATCHELDER.

BRIARCLIFF unquestionably demonstrated the roadability of those automobiles which participated. And true roadability demands much when it must be proven in such an event as the contest for the Briarcliff trophy, held over the picturesquely tortuous highways of Westchester county, N. Y., Friday, April 24.

So closely did the leading half-dozen mechanical contenders finish that the finding of the winner resolved itself into a question of personal equation. Strang, an ebullient and typical type of Americanism, born in Amsterdam, New York State, snatched the high honors by guiding a semi-racing product, imported from Milan, Italy. This car possesses a name pleasingly remindful of the land of art and olives and spaghetti, and it is a double-header: Isotta-Fraschini. Sturdy Strang had won with it at Savannah some few weeks previous, and his confident yet skilful piloting of the crimson-hued craft had caused his being picked by the wiseacres as the most probable winner of the twenty-two Briarcliff candidates. It is now a matter of history that he upheld this good opinion of his admirers, and in the success scored he deserves equal credit with the specially constructed car which he drove.

Cedrino, with another special made semi-racing car, was expectedly a most determined opponent, and it may be that he would have gotten closer to the leader if the race had been prolonged to the original ten circuits. But it is a pretty good guess that if Strang had been forced to do so, he could have gotten a sufficient amount of speed out of his smooth running Isotta to have retained the advantage.

As an actual matter of fact a large sized wreath of the laurels belongs to Guy Vaughan and the Stearns stock car which he drove. Engine troubles were nil, but tire experiences were unfortunate. And in this matter of tires, an element of luck was bound to exist over such winding, racking stretches of good, bad, and indifferent roads. Of the tire difficulties not a few could be traced directly to the inconsiderate manner in which drivers savagely went at some of the most abrupt turns.

Fourth to finish was "Herb" Lytle, whose consistency kept him among the quartette of leaders in every lap except one. Had it not been for an exasperating final run, he might have occupied third place. But one might also say that if Vaughan had not had his misfortunes, he might have actually won.

Unofficially fifth place belongs to Seymour and his Simplex, and likewise, unofficially, sixth place can be fairly claimed by Leland and a Stearns. Officially Sartori and the Bianchi get the honor, for it was after the clockers of "Sammy" Butler had suspended operations that Seymour and Leland forced their way through the straggling mob which had taken possession of the course immediately after the Bianchi had finished.

Guy Vaughan, Driving Stearns, Finishing Third.

While it is true that Nature supplied a course rather easy to police, it is a surmise that Providence must have lent aid to the volunteer soldier boys, who were more youthful looking than impressive without their uniforms and guns. There certainly was much for congratulation in the fact that the onlookers repeatedly displayed sufficient agility to keep out of the path of the flying cars, for in many instances it was more owing to their own activity than to the farcical authority of the cane-carrying soldiers that nothing serious happened.

The decision of William K. Vanderbilt, Jr., that no race for his trophy shall take place except over a properly guarded course—which means the presence of uniformed men armed with authority — still remains a logical and sensible decision.

Despite some daily newspaper reports to the contrary, it is a certainty that not half as many people saw the Briarcliff race as witnessed the 1906 struggle for the Vanderbilt cup. Had the very inadequate railroad facilities of reaching Westchester County been equal to the capacity of the Long Island transportation channels, thousands more would have journeyed to the Briarcliff event and would have added to the perils of the racers as well as to themselves. Therefore, it was most fortunate under the circumstances that the course was far less accessible than the one in Nassau county.

But the next race for stock chassis should have rules far more carefully drawn than those which governed the Briarcliff event. The manufacturer who enters such a contest should decline to do so unless confident that he will be fully protected from competing against cars of special construction, made in limited quantities, and in reality deserving the designation of racers.

Herewith are extracts from 1908 A. A. A. racing rules, drafted by a sub-committee, including S. A. Miles, Alfred Reeves, and A. L. Riker:

"Stock Car."—A motor car completely described in the manufacturer's catalogue for the current or any preceding year, which is manufactured in quantities, of ten or more, which is on sale by the regular selling representatives of the manufacturer and is manufactured ready for delivery to buyers.

"Stock Chassis."—A chassis which, without any change whatsoever, except that lighter gear springs may be used, can, by adding the necessary parts, be assembled into a complete stock car for which it is designed.

It is furthermore known that the technical board of the A. A. A. is going to add a few recommendations which may help to some degree in making stock car events exactly what they are intended to be: demonstrations to buyers of cars which can be bought at any time. It might be a good idea for the technical committee of the next stock chassis race to visit the factories of the entrants and in the assembling room pick out and stamp an entire car or its essential parts. This would make unfair advantages impossible and eleventh-hour protests unnecessary.

It should be said, however, that the Briarcliff race, in spite of its defects, would have been worth while if it had only demonstrated—as it did—the roadability of the average modern automobile. Such a vigorous examination could not have been accomplished scarce a year or so ago, and the searcher for mechanical fitness can find much to please him in a study of the Briarcliff summary.

Invading a county which was presumably desirous of giving a course for the race, Chairman R. L. Morrell and Secretary T. F. Moore and the committeemen encountered much opposition, which even prolonged itself until the midnight before the morning of the race. But difficulty after difficulty was smoothed out, hold-up after hold-up was met, and finally the road in front of the grand and official stands was sufficiently clear to enable the energetic Wagner to get the flying procession under way.

IT was not until 4:16 A. M. that Chairman Robert Lee Morrell and Secretary Thomas Francis Moore arrived at the grandstand. With the hour of the start—4:45 A. M.—less than a half an hour away, an appalling problem faced the promoters. Despite the fact that it had been announced that the course would be closed at not later than 3 o'clock, the home stretch was packed with scores of cars, whose occupants were begging to be told how to get to the official grandstand and the parking spaces. The roadway was a mass of pushing, jostling people. Newspaper men were calling for "Schwartzy," and blindly seeking their allotted seats. Telephone men were adjusting wires and setting up transmitters, and telegraph linemen were connecting instruments. On the grandstand, located on the hillside above, ushers with lanterns were helping early comers in their search for boxes and seats. Bands of boisterous militia-marshals were pushing their way through the crowd to their stations, yelling with delight at this new lark of race-course guarding.

Sartori, who was to be the first starter, arrived at 4:22 o'clock and pushed his way to a place near the tape. Other contestants were behind him, but swallowed up in the human maelstrom that surged through the narrow home stretch. That the start could not be made on time was certain. Whether the race could be started at all was a problem. Starter Wagner plunged into the crowd, and began at once his task of getting the cars in line. He has hustled before. He never hustled and fought as he did this time. He was doing his work all right, all right.

With the time of the start but ten minutes away, the course was a mass of seething humanity. Talk of calling off the race entirely came from the group of naturally despairing officials. Something had to be done. Harry Burchall, chief of the marshals, proceeded to do it. Calling upon his aids, and appealing to a group of veterans for assistance, the struggle to clear the course began. With rushes marked by frequent hand-to-hand fights, the crowd was forced back and to the side until a semblance of a pathway was made, through which the cars might reach the starting line.

A. R. Pardington, the referee, announced to the press that the distance had been cut to eight laps, and that there would be a ten-minute control through Mt. Kisco for a stretch of 2.8 miles. No official measurement of the course was given out. Odometer reports had placed the length of the circuit between 32 and 33 miles, so by common consent 30 miles of racing road was accepted by all hands and the elapsed times announced were net on this basis. In a word, the eight 2.8 miles controls were eliminated in the timing. Each car was equipped with a box into which the control cards were dropped, following the method employed at the controls in the first Vanderbilt Cup race. Oldfield, by the way, lost his card-box during the progress of the race. McMurtry saved the cards.

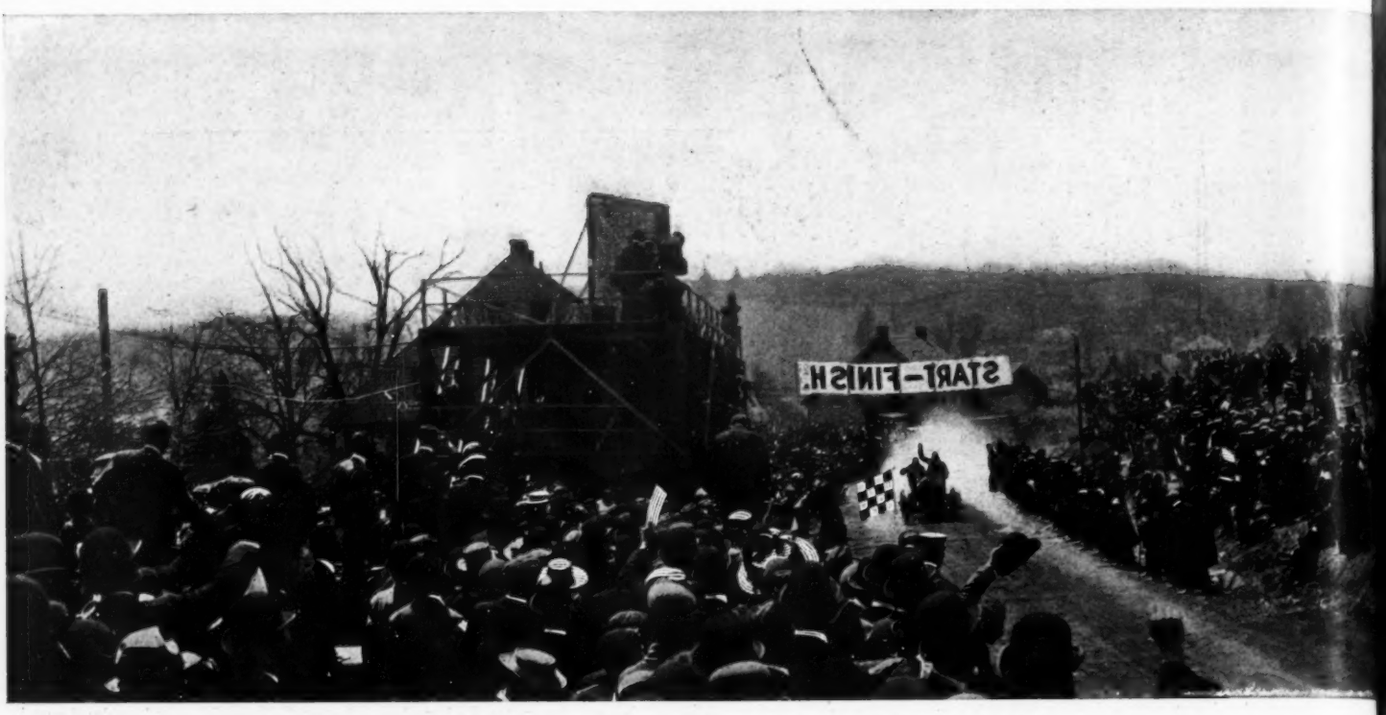
At 6 o'clock the roadway was at least passable, though by no means clear. The official grandstand with its 3,500 seats and 240 boxes was a little more than half filled. The bank beneath the grandstand was crowded, shutting off the view of the finish stretch from the grandstand. In fact, the grandstand folks had but a meager peep for their money. A quarter of a mile below the course curved sharply and was followed by a hundred-yards climb up quite a perceptible grade. Then the racers almost immediately disappeared over the top of a hill beyond the start. The conditions at the stand were bad, and apparently nothing was known of how matters stood at other parts of the course. It was a gamble with fate, yet it was decided to cast the die, though "Wag" protested vigorously against the risk of a send-off being yet taken. At this moment two ambulances ominously drove up and took their stand by the roadside.

The First Lap.

The race was started at 5:07 o'clock, "Wag" counting Sartori away first and despatching the others at one minute intervals. All the drivers had friends to cheer them, but Barney Oldfield proved the prime favorite with the general public, though the fraternity seemed to take the most interest in Strang, Cedrino, and Vaughan. Bergdoll toed the scratch with no tool box, but on showing that he carried a full equipment of tools was allowed to start.

The first bulletin that Peter Prunty bawled through his megaphone was that Oldfield had passed Roberts at the railroad crossing. Roberts had started just a place ahead of Oldfield. There had been considerable side betting between the followers of the two, so this information was interesting. Vaughan got by Michener at Armonk, and Cedrino passed Sartori at Val-

Oldfield (Stearns) Overhauling Harding (Isotta).



Happy and Victorious Strang, Driving the Winning Isotta Across the Finish Line.

halla, and led the procession. About this time the crash of an axe against wood behind the stand attracted attention. The Pinkertons were raiding the shell game camp that the nimble fingered gentry had pitched.

All this time Wagner, Burchall, and the whole outfit were fighting with the crowd to clear the course for the return of the racers. The megaphone bulletins had told that the leaders were nearing the stand, apparently well bunched. All eyes were directed toward the sharp turn at the foot of the hill. In a minute a red car dashed around it and up the hill. This was at 5:49:42 or 42:42 from the start. It was the Savannah cup winner, Strang. In a single lap he had got by Lytle, passed Cedrino, and disposed of Sartori, making the round in 39:42. In 18 seconds Lytle shot by in second place. Just behind him came Sartori. The latter's Bianchi was plunging from side to side and stopped at the foot of the hill with a punctured tire. Cedrino and Leland completed the lap in order before Sartori had replaced his tire and got under way again.

Strang was out for a runaway race of it, such as had brought him victory at Savannah. Seymour had made a splendid run from the start with the Simplex and was actually second and but 14 seconds behind Strang. He had fought his way from

Start of Murphy, the Maja Candidate.

twenty-first in line at the start to the fourteenth place in the procession. Lytle was third in the race, and Poole fourth. Harding, the third Isotta man, had put on two new tires and replaced spark plugs, and yet had managed to climb from nineteenth to tenth place in the race.

The first and most serious accident in the race occurred in the first lap. Watson, by reckless driving, dashed into a telegraph pole at East View. He and his mechanic, Cotter, were thrown out, but only slightly injured. Watson pluckily set to work to mend the bent steering post and wheel, and in less than three hours had his car running again, so that he was timed for five laps in all.

Michener came to grief just where Sartori did, and lost 4 1-2 minutes putting on a tire at the foot of the home stretch hill. Harding in this lap made a three-minute tire replacement in front of the stand.

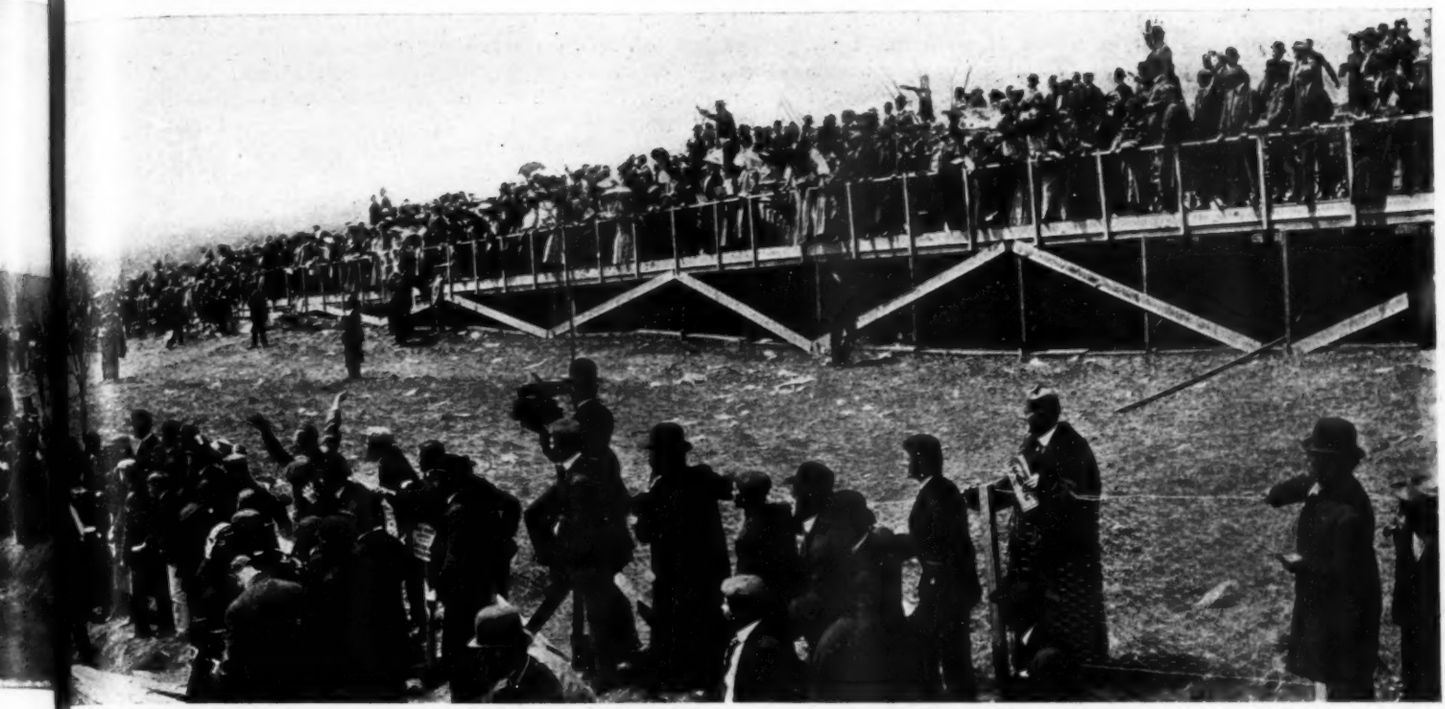
The Second Lap.

The order of the four leaders in passing the stand on the second lap was little changed: Strang, Lytle, Cedrino, and Leland. Cedrino actually had been passed by Vaughan and Murphy. The latter, by the way, was making a remarkably good race with the little Maja, the lowest-powered car in the race. In actual time, Strang led Seymour by about two minutes, with Vaughan third and Lytle fourth. Strang was rapidly pulling away from his pursuers, a trio of American cars. The home product was showing up splendidly against the foreign cars. Strang had covered the second lap in 39:18 net, his fastest in the race.

Word now came that the planks on the bridge across Murray's Creek were loose and dangerous. A carpenter was hurried to the spot with new beams.

Another interesting bulletin was to the effect that a cable from the London surety company had been received stating that the protesting Greenburg, which threatened to stop the race, had been included in the indemnity bond.

Robertson, from whom much had been expected with the mighty Panhard, had had tire troubles to burn and had fallen far toward the rear. "Monty" Roberts, too, was greatly disappointing his admirers. Oldfield, a sensation maker by profession, had a narrow escape from being wrecked by a train at



Picturesquely Situated, Unfortunately the Grandstand Did Not Supply a Most Extended View.

Kitchawan, the cow-catcher, so the story has it, actually lifting one of his rear wheels. Bernin's magneto came loose, and cost him a delay of 12 minutes before it could be readjusted.

The Third Lap.

Strang continued his daring runaway tactics and gained still another minute on Seymour in the third round. Vaughan and Lytle were having a hammer and tongs duel of it, and at this point the Stearns driver had a bit the better of the Jackrabbit. Minute intervals separated Seymour, Vaughan, and Lytle. Poole, who had a lot of troubles in the second lap with his spark plugs, just as he did at Savannah, got under way again with a vengeance and fought his way from tenth to seventh place. Oldfield was also going well with a lap in 41:15. In fact, the track champion was proving himself not a half bad road driver. Murphy was delayed by a blowout.

The Fourth Lap.

Seymour dropped back from his place as runnerup to lead in the next lap, letting Lytle and Vaughan into second and third positions respectively. The Simplex crack had been detained 13 minutes at Mt. Kisco, owing to the grease cup on his clutch having run dry. Strang, the leader, opened a gap of ten minutes on Vaughan, his nearest pursuer. The new American premier was going at wholesome speed, each of the four laps having been done under 40 minutes, a feat approached so far by but one of his rivals, Seymour, and that in only one lap. Barring accidents thus early he looked like an easy winner.

In this lap two cars were eliminated from the contest. Murphy, who had been making a fine showing with the Maja, having been at one time in fourth place, ditched his car and put it out of the running with a broken front wheel. Parker's Fiat ceased from strife with a cracked cylinder and a broken rocker arm.

This was the fastest lap for several of the racers: Harding, 41:48; Michener, 42:13, and Bloch, 45:29.

Oldfield's gas feed became clogged and his motor stopped. He had lost all his tools and was practically helpless. Finally the gasoline filtered through, the obstacle having been forced out. His loss of time at this juncture was very unfortunate.

The Fifth Lap.

Cedrino, the Cyclone pilot, now woke up and began the fast and well sustained run which finally landed him in second place. The close of the fourth round had left the betting favorite in the race in fifth place. Having stopped to replenish fuel, he was prepared for a great effort. He certainly did make it, and make good with it, too, for he covered the 30-mile circuit in 39:35 and got by Poole, who had led him a couple of miles the preceding lap. He was now right on the heels of Lytle and Vaughan. The uncatchable Strang, however, was 12 minutes ahead of Lytle, his nearest pursuer.

Two more contestants went to the bad for good in this round. De Palma ditched the Allen-Kingston and hopelessly bent the front axle. Michener collided with a rock and bent the axle of the Lozier. In cranking the engine, it kicked and hurt his leg. This left 18 cars in the race fit for service and they all were running when the yellow flags stopped the race.

Mulford's mechanic in cranking the engine was actually kicked over and lay in the road senseless for some minutes.

The Sixth Lap.

A desperate hair-raising race was now on between Cedrino and Vaughan. In the duel between the two, Lytle was left behind and Strang's lead was considerably cut. The Italian put up a lap in 37:29. The blond New Yorker responded with a circuit in 36:51 and retained his second place by the narrow

Barney Oldfield, His Cigar, and Stearns Car.

margin of 15 seconds. Strang had slowed down to 40:24, yet still had over 11 minutes margin in case of accidents. Lytle, Poole, and Seymour were fourth, fifth, and sixth at one minute intervals. Sixteen minutes separated the first and sixth men of the leading sextette.

The Seventh Lap.

Strang without doubt now had the race well in hand, but not so surely that he could let up from the fast gait he had set and maintained from the start. Behind him Cedrino was driving like a wild man and eating up the intervening space with every bound. Faster and faster flew the Fiat. It had gone very fast in the fifth round, faster still in the sixth, and in the seventh there was still another kink of speed for Cedrino to let out. It was one of the most remarkable pursuits and gamest stern chases in the whole history of automobile racing. The Italian scored 37:16 for the seventh round, an average of about 48 miles an hour, a marvelous gait over such a course. He cut down Strang's lead from 11 to 10 minutes, though the Isotta crack had been going some himself with a lap in 38:43. Vaughan, Lytle, and Seymour were at Cedrino's heels as long distance racing goes and having a glorious triangular duel among themselves, Vaughan a minute and a half, Lytle three minutes, and Seymour six minutes behind the Italian, intervals that might easily be altered by a spurt or a slight accident.

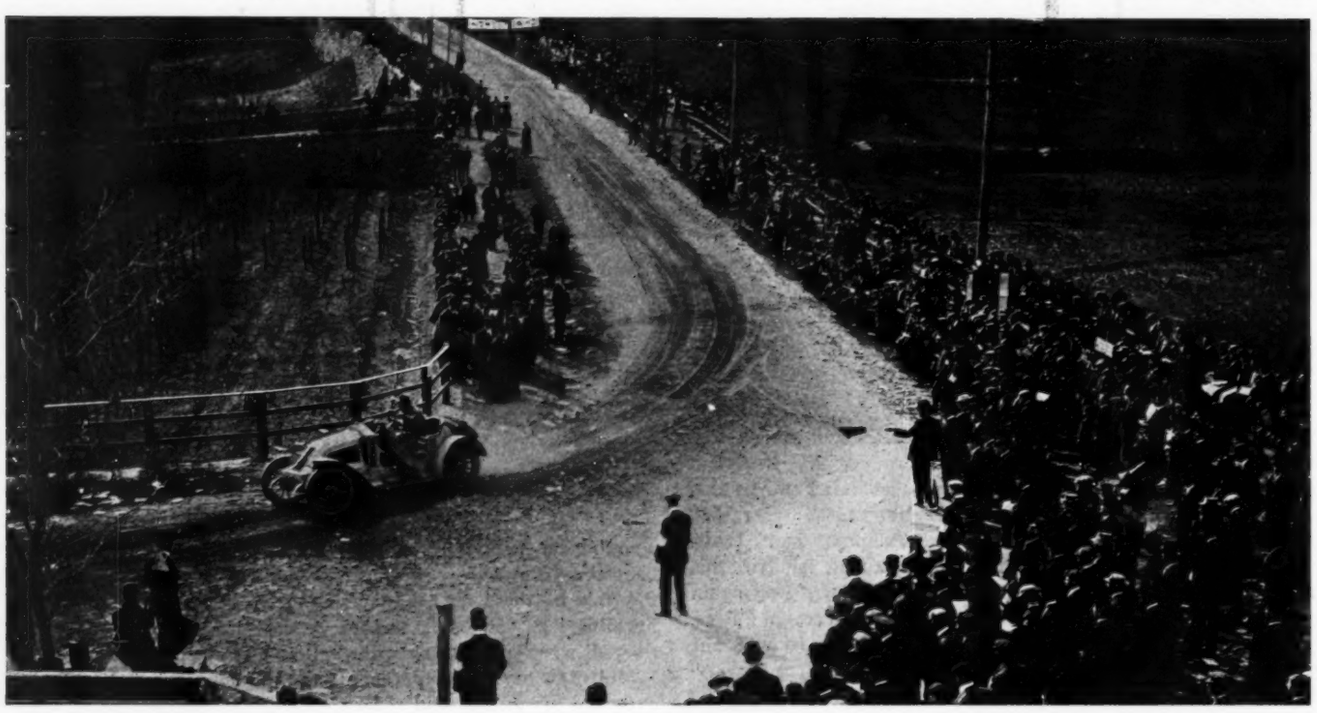
Michener lost a tire. This made three punctures in all, each one occurring when he was far from any tire control.

The Finish.

The megaphone bulletins of the passing of the cars at the various points now became intensely interesting, and, in fact, vital. Reports from Mt. Kisco, Armonk, and Valhalla, told of the passing of Strang and Cedrino in order. Then came the final word from East View and the homestretch had been reached. Five minutes of excited suspense, and the red Isotta swung around the last corner with a mighty skid and thundered up the hill to the finish line, winner of the race in 5 hrs. 14 min. 13 1-5 sec. Cedrino's Fiat was second in 5:21:05 3-5. Vaughan (Stearns) was third in 5:28:29 2-5. Lytle (Apperson) was fourth in 5:39:15 2-5. Sartori (Bianchi) was fifth in 5:53:45 3-5.

The crowd was now uncontrollable and swarmed the course. Though it had been announced at the close of the seventh lap that eight cars would be permitted to finish, Chairman Morrell, seeing danger imminent, told the telephone men to 'phone for the hanging out of the yellow flags. Despite the crowd on the course Seymour managed to cross the line with the Simplex within three or four minutes, closely followed by Leland. Had they been officially timed, both would have beaten Sartori, who would have been thus put back into seventh place, as it started twenty minutes ahead of the Simplex and four minutes before the Stearns.

The final round brought quite a harvest of mishaps to the racers. Lytle had a blowout and two spark plugs blew out, all within four miles. Vaughan and Leland both had blowouts, the former one and the latter two. Seymour broke the hose connection to his radiator and was also held up five minutes by a train between the Apperson and Simplex camps. Leland ran out of gasoline, borrowed some from a Winton touring car and put it into the tank with beer bottles. Michener was stopped by a puncture while on his seventh lap.

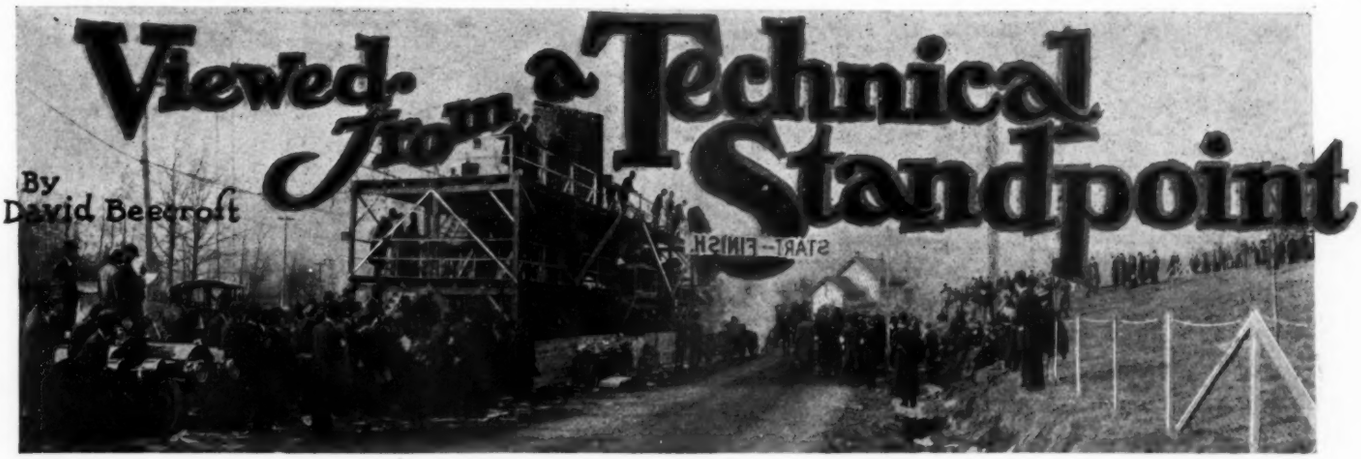


Renault, Bloch Driving, Enjoying One of the Best Stretches of the Entire Course, Where the Highest Speed Was Possible.

HOW WINNING DRIVERS WERE REWARDED.

There is always a vast deal of glory for both car and man in crossing the tape victorious in a big automobile road race, but this is not the most substantial reward that the drivers of the first cars receive by any means. For instance, Strang received a bonus of $1,000 from his employer, J. H. Tyson, $500 from the Michelin Tire Company, $100 from the Hess-Bright Manufacturing Company, and $100 from Lavalette & Company, his winning Isotta having been equipped with Michelin tires, Hess-Bright ball-bearings and the Eisemann magneto. Another prize, previously announced as $100, was raised to $200, by the Hartford Suspension Company, the winning car having been equipped with its shock absorbers.

Cedrino, having taken second honors, received a prize of $250 for bringing Continental tires over the tape in the next to best place, while Vaughan, in the Stearns, received a prize of $125 for having gained third. In addition to the $500 given to Strang for having brought Michelin's in first, the Michelin Company also gave $500 to the entrants of the car, the Isotta company.



ACCORDING to A. L. A. M. rating, Strang's Isotta was the highest powered machine on the course, its cylinder diameter of 145 mm. being equivalent to 5.7087 inches, which by the formula gives 55.1 horsepower. Cedrino's Fiat that carried off second honors was much lower powered, showing but 48.4 horsepower; Vaughan's Stearns is rated at 46.2; Lytle's Apperson ties with the Fiat at 48.2; Seymour's Simplex, the non-official fifth, with its 5 3-4-inch bore, gives 52.9 horsepower; Leland with his Stearns, the non-official sixth, is 46.2, the same as Vaughan's; and Sartori's Bianchi, the non-official seventh, but official fifth, is but 41.6, the cylinder bore measuring 130 mm., which translates to 5.1182 inches. These were the only seven cars to reach the grand stand on the eighth lap and have their times recorded, the Simplex and Leland's Stearns being vouched for by three press representatives. Leaving the human factor out of the race then, the proper car won, assuming the mechanical construction of all of them to be on a par, which, of course, is far from the actual status of these seven machines.

That the highest-powered car should win, was not unexpected in the Briarcliff, due to the intoxicating meandering of the course through mountain valleys, by woodland stream, through forests, and by lakes, providing, of course, the car was geared for the test. Here is where some of the makers—and they were not a few—made a grave error; speed was the sole object sought, and, of course, high gearing was looked upon to provide this. But in this calculation the problem of having to slow down 87 times on each circuit because of bridges, corners, curves, or railroad crossing, besides added lowering of speed due to other cars on the course, was neglected, and this alone was responsible for a part of the story. Approximately 90 slow-downs on each circuit makes 720 on the eight laps, and whenever there was a slow-down there had to be a picking-up, and in these 720 pick-ups the mediumly geared cars had a great advantage. This was particularly noticeable at some of the grandstand curves. Once on the short straightaway stretch leading past the grandstand, Strang would throw into high and be away in a twinkling, whereas not a few of the others were slow and lost time on changing gears. In a course with 50 per cent. of straightaway, high gearing is good, but not so where 720 curves or turns have to be made. This happy combination of high power and medium gearing, coupled with the dexterity of Strang as a racing car pilot, and the good construction and design of the Isotta was the cause of the victory.

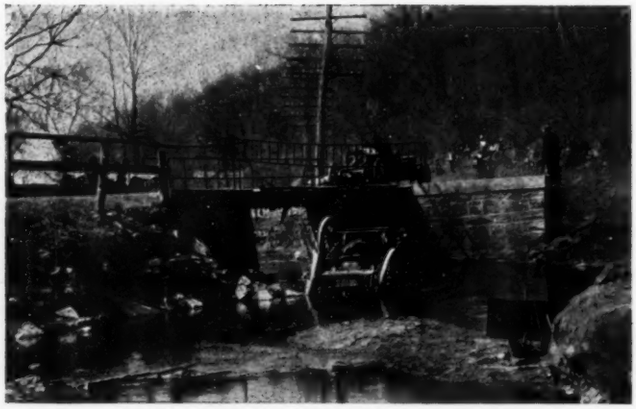
Wheelbase.—Next of importance in racing cars over a course of Briarcliff nature is the abbreviated wheelbase, which was lacking on most of the twenty-two competing cars, the Apperson, Hol-Tan, Shawmut, and Fiat being the only ones between the 100 and 110-inch marks. Strang drove a 118-inch machine, Vaughan's Stearns is 120 inches, the Loziers are reported at 124 inches, the two Simplexes have the same measurement, the Bianchi is 120, and the two Renaults and the Thomas are catalogued at 112 inches. The exact length of the Fiat wheelbase is not known, but it is short, and this was in part responsible for a few of the fast laps Cedrino made. In making the grandstand curve Strang never accomplished it nearly so fast as Cedrino did on his last four laps; Lytle took it fast without apparent skidding; whereas Seymour with his long wheelbase Simplex threw up more dirt at less speed. Poole in his Isotta is a fast corner driver, duplicating not a few of his performances of the Savannah course, but throwing up clouds of loose earth on the poorer turns.

But the abbreviated wheelbase did not play as big a part on the 600 or more turns each driver who completed the eight laps had to make as might be expected, due to the peculiar grouping of the turns, it being rare except at right-angled turns for one to be alone. In places three or four follow in succession, the driver having to zigzag the course for a half mile at a stretch. On such places fast speed is not possible with any length of wheelbase; but it would have been interesting if a car of 96-inch wheelbase, much like the winning Darracq in the last Vanderbilt race, had been in the contest.

Tires.—After having noted a few of the primary considerations on racing cars, the majority of the spectators, for some unknown reason, look into the tire situation, and not a few of them believing that tire size, as well as construction, is a determining factor in a contest. With the exception of the Renaults, all of the foreign machines used one size of tires on the front wheels and a larger size on rear; Strang's Isotta used 870 by 90 mm. or 34.25 by 3.54-inch ones on the front wheels and 880 by 120 mm. or 34.64 by 4.72-inch pneumatics on rear. Cedrino's Fiat used the same sizes. It is not known the exact sizes used on the Stearns machines; Lytle used 34 by 3 1-2 and 4-inch front and rear; Sartori was an apparent believer in big tires, his Bianchi carrying fronts measuring 35.82 by 3.54 inches and the rears 36.02 by 4.13 inches. But it remained for the Simplexes and the Panhard to take the biggest sizes, these cars using 36.8 by 5.31-inch ones on rear. The Simplex used a 36.02-inch size in front, but the Panhard preferred a smaller size. The Loziers used 36 by 4 and 4 1-2-inch sizes in front and rear; 34 by 4 and 4 1-2 sizes were carried by Roberts on his Thomas; the Shawmut carried 3 and 36-inch makes; and the Allen-Kingston and Maja used small sizes. Practically all of the cars started off with studded-treaded pneumatics on the rear wheels and plain treads on the fronts; but it was noticeable how many put the studded treads on the fronts when a change was necessary.

It rarely happens in a race in this country that grandstand spectators have a glimpse of tire repair work, but two good views were had of this right at the starting and finishing points. On his first lap Sartori blew out on the grandstand turn, and a little later Poole changed at the same point. Both were good examples of the value of the demountable rim, the time required in one case being less than three minutes and in the other a little over four minutes. That Strang should make the

A Change of Tires at the Continental Control.



Where Ryall's Matheson Landed Two Days Before.

Barney Oldfield Tries a New Tire.

Pinkerton Man Putting a Gambler's Plant Out of Business.

Bloch (Renault) Approaching Grandstand.

240 miles without a change of Michelins, incidentally duplicating his Savannah performance, is a point of great interest, and seems to prove that it is not so much the taking of corners as continuous high-speed traveling that works havoc with tires. While there were times in the Briarcliff that the cars were touching 80 miles per hour or more, these periods were exceptionally brief, and the tire temperature was apparently kept lower because of this. Those drivers who had tire trouble had it because of too fast corner work, due to hitting the corner at too high speed, using the brake too severely and then skidding badly on the turn. Parts of the course were very hard on tires, due to the loose stones; but, offsetting these spots, was the 10-minute control in Mt. Kisco which gave the tires an excellent opportunity each lap for dropping a few degrees in temperature. The steel studded tire proved a good servant for the many turns, as well as the multitudinous braking work.

Brakes.—One entrant after the race declared that to-day it is harder to make a good brake than a good motor, and the worn condition of a few of the brakes proved the quantity of truth the assertion contains. The last few Glidden tours have impressed very emphatically on many makers the efficacy of ample braking surface; in fact, tours impress this more than road racing. But the Briarcliff was an ideal jousting ground for friction brakes. All of the chain-driven cars with the exception of the Panhard used four brakes, the preferred location being two contracting band ones on the jackshaft and two expanding or contracting members on the rear wheels. Strang employs the cast iron against steel variety having two located on the jackshaft and two on the rear wheels. On the Fiat four metal brakes are positioned, two on the transmission and two on the rear wheels; on the three Stearns cars are steel against brass brakes, two on the jackshaft, two on the driving wheels; on the Apperson are four on the back wheels, the expanding set steel against bronze; the four on the Simplex machine are two copper-lined ones on the differential shaft and two cast iron against steel rear wheel brakes. Many of the shaft-driven machines use but three brakes, two on the rear wheels and one on the drive shaft or transmission shaft. It was a commendable point to notice how little slipping of the wheels was done in making the turns, the old-time story of "slipping the wheels and skidding around the corner" not having many followers. Such "slipping and skidding" makes a few seconds only to be lost in minutes by changing tires.

Ignition.—In ignition the magneto has the entire field; the winning Isotta used an Eisemann high-tension magneto such as is familiar to many American car owners; a similar machine was employed on the Panhard, and in practically all of the remaining twenty machines Bosch magnetos of the high or low-tension variety were used. Double sets of spark plugs are quite common, but even two sets were not sufficient for many of the machines, and plenty of spark plug trouble was experienced. With Poole the porcelains gave trouble, as they did in Savannah, and Lytle's last lap was 10 minutes longer than his previous

ones because of these little parts. A portion of the trouble seems to be not in the fouling of the points, but in the fusing of them, due to the amperage and voltage. Plugs removed were perfectly clean, but the two sparking points united by a metal bridge.

Clutches.—The majority of cars used the multiple disk clutch, the followers of cone clutches being limited to the two Renaults; the Apperson was the only band clutch; the Stearns the only expanding type; the Maja the only coil spring Mercedes type; the Thomas the only three-disk variety, and the rest including Isotta, Fiat, Bianchi, Simplex, Lozier, Allen-Kingston, Panhard, and Shawmut used the multiple disk variety, the number ranging from fifty-one bronze and steel disks in the Isottas to smaller numbers in some of the others. The Shawmut employed the well known Hele-Shaw type containing fifty-one disks each having corrugations to increase the friction surface without excessive diameter as well as to facilitate disengagement.

Speeds.—In change speed sets, the selective type is paramount, the Panhard being about the only adherent of the progressive variety. The three Isottas were the only cars having but three forward speeds; all of the others using four.

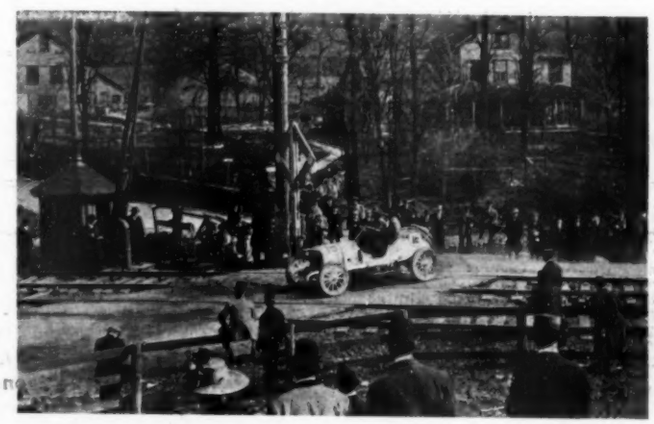
Car	H.P.	Bore	Stroke	Car	H.P.	Bore	Stroke
Isottas	55.1	5.7087	4.7245	Renault	44.1	5 1-4	5 3-4
Fiat	48.4	5.5110	5.1182	Thomas	52.9	5 3-4	5 1-2
Stearns	46.2	5 3-8	5 7-8	Allen-			
Appers'n	48.4	5 1-2	5	King'n	40	5	5 3-4
Bianchi	41.6	5.1182	5.9056	Panhard		5 45-64	5 5-16
Simplex	52.9	5 3-4	5 3-4	Maja	30	4.3308	5.1182
Lozier	44.1	5 1-4	5 1-4	Shawm't	36.8	4.8	5 1-2

Motors.—Practically all of the motors excepting Apperson, Thomas, and Panhard, use cylinders cast in pairs, some employing valves on one side and others on opposite sides. The "T"-head cylinder is employed in the Apperson, Thomas, and Panhard. Where cylinders are in pairs the desire to obtain large valves has led to placing the valves oppositely, as in the case of the Isottas that employ 2 1-2-inch valves; but the Stearns cars have them on one side. Positive pump and fan circulation is in use on all excepting the Renaults, in which thermo syphon circulation is employed, and in which cars the radiators are carried at the rear of the motor, forming the dash.

Lubrication.—The trouble with the majority of motors on long races appears to be the lubrication problem, and it is surprising the amount of oil injected into them, especially those of the high-speed variety. Over 40 gallons were used on the 240 miles by three of the contestants, two of the others said over 30 was used by each of them, and those not questioned doubtless have similar tales of big oil consumption. When many of the cars passed they were lost in a cloud of smoke, which was such as to fill the road from side to side; on the other hand not a few cars made the seven or eight laps without ever emitting a bit of smoke, and it would be interesting if it were only known how much oil they used. As it is, the oil consumption of a car in a big race is not comparable to the consumption of such a car on touring work, and the prospective buyer need not get frightened at this favorable Standard Oil showing of some of the fastest machines.

This Was Headquarters for Maxwell Owners.

Cedrino (Fiat) Making a Turn.



Hilliard (Hol-Tan) at the Railroad Crossing.

Michener (Lozier) at Mt. Kisco Control.

Being Escorted Through Mt. Kisco Control.

Stock Cars?—As to stock cars, the less said in some cases the better. There were stock cars in the race, not a few of them, and they were immediately recognized by the spectators. But, on the other hand, there were cars of which ten duplicates have not been built as yet by the factories. There is not a doubt but that ten of the Isottas have been built and sold; in fact, there is good proof that many more than that number have left the factory; there is some doubt as to the manufacture of ten duplicates of Cedrino's Fiat, which proved to be the fastest car on the course; the Appersons are known to have built more than ten of their "Jackrabbits"; questions have been raised as to whether ten of the Loziers were finished by the time limit set; but with the Stearns, Thomas, Allen-Kingston, Shawmut, Maja, Renault, Simplex, and Bianchi not a word was said. They are stock machines and look it.

The Mt. Kisco Control.—The ten minute control at Mt. Kisco puzzled a great many. Here the racers were met by men on motorcycles and escorted through the control at a regulated speed of 20 miles per hour. Some complaint was made by the deputy sheriffs that a great many of the drivers exceeded this speed, in spite of the fact that no matter how fast they made the control they had to stay there for ten minutes. This was remedied, and the officials of the law were satisfied.

An Old-fashioned Lady.—One of the curiosities of the race was an old-fashioned lady who owned nearly an eighth of a mile of haying ground alongside the course, just below the grandstand. She refused all offers from speculators to rent her property for the day for a grandstand.

TABULAR STORY OF 240-MILE RACE FOR BRIARCLIFF TROPHY, APRIL 24, 1908, IN WESTCHESTER COUNTY, N. Y.

No.	CAR	H.P.	Owner	Driver	1	2	3	4	5	6	7	8	Running Time.
4	ISOTTA	50	J. H. Tyson	Strang	39:42	38:23 77:65	39:18 116:83	38:39 155:22	38:38 194:00	40:24 234:24	38:43 273:07	40:26 1-5 313:33 1-5	5h., 14m., 13 1-5s.
2	FIAT	60	Fiat Co.	Cedrino	45:01	40:03 85:04	40:09 125:13	44:44 169:57	39:35 208:92	37:29 246:21	37:16 283:37	36:48 3-5 3 0:25 3-5	5h., 21m., 05 3-5s.
8	STEARNS	60	W. C. & P.	Vaughan	42:12	40:15 82:27	39:43 121:70	43:56 165:26	41:50 207:16	38:51 246:07	38:52 284:59	42:50 2-5 327:49 2-5	5h., 28m., 29 2-5s.
3	APPERSON	50	S. B. Bowman	Lytle	41:00	40:47 81:47	42:01 123:48	43:11 166:59	40:36 206:95	40:36 247:31	39:25 286:56	51:39 2-5 338:35 2-5	5h., 39m., 15 2-5s.
1	BIANCHI	40	Percy Owen	Sartori	48:15	43:14 91:29	44:29 135:58	47:05 182:63	44:31 227:34	42 17 269:51	41:55 311:06	41:59 3-5 353:05 3-5	5h., 53m., 45 3-5s.
21	SIMPLEX	50	Palmer & Singer	Seymour	39:56	40:31 79:87	40:05 119:92	51:48 171:40	39:56 211:06	39:16 250:22	39:28 289:50	Still running	
5	STEARNS	60	W. C. & P.	Leland	43:16	42:01 85:17	41:24 126:41	49:49 177:90	39:14 217:44	45:06 262:50	40:13 303:03	Still running	
11	ISOTTA	50	Isotta Co.	Poole	41:03	44:54 85:57	41:03 127:00	40:59 167:59	41:51 209:50	39:49 249:39	54:41 294:20	Still running	
19	ISOTTA	50	Isotta Co.	Harding	43:54	51:31 94:85	43:14 137:99	41:48 179:47	47:09 226:56	42:46 269:42	43:41 313:23	Still running	
13	STEARNS	60	W. C. & P.	Oldfield	43:47	41:39 84:86	41:15 126:01	59:57 185:58	43:15 228:73	50:46 279:59	46:59 326:58	Still running	
16	HOL-TAN	40	Hol-Tan Co.	Hilliard	46:00	46:04 92:04	45:41 137:45	45:55 183:00	47:48 230:48	46:39 277:27	50:07 327:34	Still running	
18	RENAULT	50	Paul Lacroix	Bloch	48:16	45:48 93:64	46:54 139:18	45:29 184:47	49:34 234:21	47:19 281:40	47:04 328:44	Still running	
12	THOMAS	50	Harry S. Houpt	Roberts	52:35	50:13 102:48	50:17 152:65	49:07 201:72	47:20 249:32	45:23 294:55	47:31 342:26	Still running	
14	RENAULT	50	Paul Lacroix	Bernin	59:38	49:23 108:61	47:48 156:09	46:40 202:49	50:37 253:26	46:39 300:05	69:56 370:01	Still running	
20	BENZ	50	L. J. Bergdoll	Bergdoll	52:02	45:18 97:20	44:38 141:58	52:20 194:18	44:27 238:45	45:20 284:05	44:30 328:35	Still running	
7	LOZIER	45	Lozier Co.	Michener	48:30	44:37 93:07	46:21 139:28	42:13 181:41	42:14 223:55	47:49 271:44	Still running		
15	PANHARD	50	Panhard Co.	Robertson	47:48	62:44 110:32	52:38 162:70	60:20 223:30	55:35 279:05	48:56 328:01	Still running		
22	SIMPLEX	50	Palmer & Singer	Watson	177:31*	46:40 224:01	40:07 270:41	41:52 311:93	40:44 264:14	Still running			
17	ALLEN-KINGSTON	30	W. C. Allen	De Palma	43:33	42:03 85:36	44:41 130:07	42:54 173:01	Ditched and bent front axle				
9	LOZIER	45	Lozier Co.	Mulford	44:17	48:16 92:33	43:04 135:37	54:59 190:36	Mechanic hurt				
10	MAJA	30	J. J. Brown	Murphy	41:31	40:56 82:27	44:49 127:16	.....	Front wheel collapsed.				
6	FIAT	60	Fiat Co.	Parker	44:09	72:12 116:19	40:31 156:50	.....	Cracked cylinder				

Note.—Although the officials announced just prior to the end of the race that eight cars would be allowed to finish, owing to the manner in which the spectators crowded on the course, the word for the yellow flag was given when only five had come in. Despite the people on the course, Seymour, in the Simplex, No. 21, crossed the line within three or four minutes, closely followed by Leland in the Stearns, No. 5, both thus beating the Bianchi, which should really be placed seventh, instead of fifth, as it started 20 minutes before the Simplex and 4 minutes before the Stearns.

*Overturned on first lap, putting steering gear out of commission.

HOW POSITIONS CHANGED DURING PROGRESS OF RACE.

No.	CAR	H.P.	Driver	1st	2nd	3rd	4th	5th	6th	7th	8th
4	ISOTTA	50	Louis Strang	1	1	1	1	1	1	1	1
2	FIAT	60	Em'n'l Cedrino	13	6	6	5	5	3	2	2
8	STEARNS	60	Guy Vaughn	7	4	3	3	4	2	3	3
3	APPERSON	50	H. Lytle	2	3	4	4	2	5	4	4
1	BIANCHI	50	P. Sartori	16	11	12	11	10	8	8	5
21	SIMPLEX	50	Seymour	3	2	2	6	6	6	5	*
5	STEARNS	60	Leland	6	7	7	8	7	7	6	*
11	ISOTTA	50	Al. Poole	4	10	5	2	3	4	7	*
19	ISOTTA	50	Harding	10	16	14	9	11	9	9	*
7	LOZIER	45	Michener	18	14	15	10	8	10	10	*
13	STEARNS	60	B. Oldfield	9	8	7	14	9	11	11	*
16	HOL-TAN	40	Hilliard	14	12	13	12	12	12	12	*
18	RENAULT	50	J. Bloch	17	15	16	13	13	13	13	*
20	BENZ	50	L. J. Bergdoll	19	17	17	16	14	14	14	*
12	THOMAS	60	M. Roberts	20	18	18	17	15	15	15	*
14	RENAULT	50	M. Bernin	21	19	19	18	16	16	16	*
15	PANHARD	50	G. Robertson	15	20	20	19	17	17	17	*
22	SIMPLEX	50	Watson	22	22	22	20	18	*	..	..
17	ALLEN-KINGSTON	30	De Palma	8	9	10	7	Ditched			
9	LOZIER	50	Mulford	12	13	11	15	Mechanic hurt			
10	MAJA	30	Murphy	5	4	9	Broke front wheel				
6	FIAT	60	Parker	11	21	21	Cracked cylinder				

*Running when race was called.

MILES PER HOUR FOR 240 MILES.

No.	CAR	Driver	Total Time	Miles Per Hour
4	ISOTTA	Louis Strang	5:14:13 1-5	46:15
2	FIAT	Emanuel Cedrino	5:21:05 3-5	44:44
8	STEARNS	Guy Vaughan	5:28:29 2-5	43:95
3	APPERSON	Herbert Lytle	5:39:15 2-5	42:24
1	BIANCHI	Paul Sartori	5:53:45 3-5	40:40
21	SIMPLEX	Joseph Seymour	5:38:05*	43:37*
5	STEARNS	F. W. Leland	5:42:00*	42:85*

†Eight laps of 30 miles each, deducting distance of control at Mt. Kisco.

*Figured on unofficial times, the Simplex and Stearns having finished four and eight minutes after the Bianchi in spite of the crowd that impeded their progress on the last third of their closing lap.

FASTEST LAPS AND MILES PER HOUR.

No.	CAR	Driver	Lap	Time	Miles Per Hour
4	ISOTTA	Strang	2nd	38:23	47:30
2	FIAT	Cedrino	8th	36:48 3-5	49:25
8	STEARNS	Vaughn	6th	38:51	46:75
3	APPERSON	Lytle	7th	39:25	45:54
1	BIANCHI	Sartori	7th	41:55	42:80
21	SIMPLEX	Seymour	6th	39:16	45:50
5	STEARNS	Leland	5th	39:14	45:45
11	ISOTTA	Poole	6th	39:49	45:05
19	ISOTTA	Harding	4th	41:48	43:50
13	STEARNS	Oldfield	3rd	41:15	41:80
16	HOL-TAN	Hilliard	3rd	45:41	39:56
18	RENAULT	Bloch	4th	45:29	39:65
12	THOMAS	Roberts	6th	45:23	39:56
14	RENAULT	Bernin	6th	46:39	38:71
20	BENZ	Bergdoll	7th	44:30	40:45
7	LOZIER	Michener	4th	42:13	41:60
15	PANHARD	Robertson	1st	47:48	37:60
22	SIMPLEX	Watson	3rd	40:07	45:00
17	ALLEN-KINGSTON	De Palma	2nd	42:03	42:85
9	LOZIER	Mulford	3rd	43:04	41:86
10	MAJA	Murphy	2nd	40:56	43:91
6	FIAT	Parker	3rd	40:31	44:44

How Fortune Smiled or Frowned Upon the Drivers

Bernin and Renault Passing Tire Control Where He Didn't Stop.

LITTLE things play a very large part in automobile road racing, and the omnipresent hand of Dame Fortune—luck for short—may make or mar the chances of any one of the aspirants a dozen times in a single round. What an all-powerful factor luck in little things is, where success in road racing is concerned, has been strikingly proven time and again on the smooth stretches of the Long Island course, with its magnificent straightaway stretches. How very much more so must it prove on the tortuous, 30-mile circuit of the crumpled-up paper type, with its impossible bends and turns, each one with its pitfall of narrow, creaky bridge, or its menacing stone wall, and with scarcely a quarter mile straight, or a half dozen places where a competitor could safely be passed at speed? This was the general consensus of opinion of the race-seasoned spectators and the devotees of the pencil and camera gathered at the stand at Briarcliff last Friday, patiently waiting for the time when the raucous barking of the hot frankfurter man would be drowned by the exhaust of the racing cars as they came to the line to be sent off to—who knows what? Conjectures were of every shade of pessimism.

Accustomed to seeing quite a substantial percentage of the competitors eliminated for once and all, before completing one lap of a good course, what would happen to the driver on this indescribable conglomeration of hills, twists and turns on which the slightest indiscretion meant disaster, was a matter of endless speculation. The little things counted, to be sure—they must always be reckoned with, but there were so few of them, and they were of such a commonplace nature in the main that precedent may be said to have been effectively overthrown. Never before have so many cars been running in full blast when the starter's checked flag has fallen over the last car to cross the line and the impatient spectators along the course have made further continuance of the race unsafe by crowding out into the road, as they did on Friday last in true Vanderbilt race style, once the flag had dropped on the fifth car.

While the inevitable happened, in that most of the delays were due to tire trouble, and, as must always be the case, they formed the bulk of the causes that made for delay, still they were very far from amounting to what had naturally been anticipated of the course, or what was to have been expected in view of the terrific strains that it imposed. Vaughan, in the 60-horsepower Stearns, carrying "No. 8," which was the first American car to cross the line, might well have been moved up a place or two in the finishing order, had it not been for the loss of two tires. Study of his performance by laps shows that they cost him close to ten minutes, and as they formed a great source of delay, it is safe to say that Vaughan would have brought the Stearns over the tape in a much better position had it not been for their retarding influence. The rear left tire gave way near Wampus Lake on the third round, so that instead of bettering his time for the lap by two minutes, as was the case on the second round, it took seven minutes more than the first time over course.

By the sixth round, Vaughan had been steadily making his pace better and had succeeded in getting well below the 50-minute mark. He passed the stand on the final going at a good pace, but had hardly cleared the brow of the hill above the grandstand when the front left tire blew out. Quick work was done in replacing this, the total loss being about four minutes, as shown by a comparison of the lap performances. Lytle's delay in the Apperson insured Vaughan third place, but without the delays incident to tire troubles, he would easily have made second, as is shown by the fact that Cedrino was but seven minutes ahead at the finish, in spite of the Italian's daredevil driving on the last three laps, which were the fastest of the race, all being under the 40-minute mark.

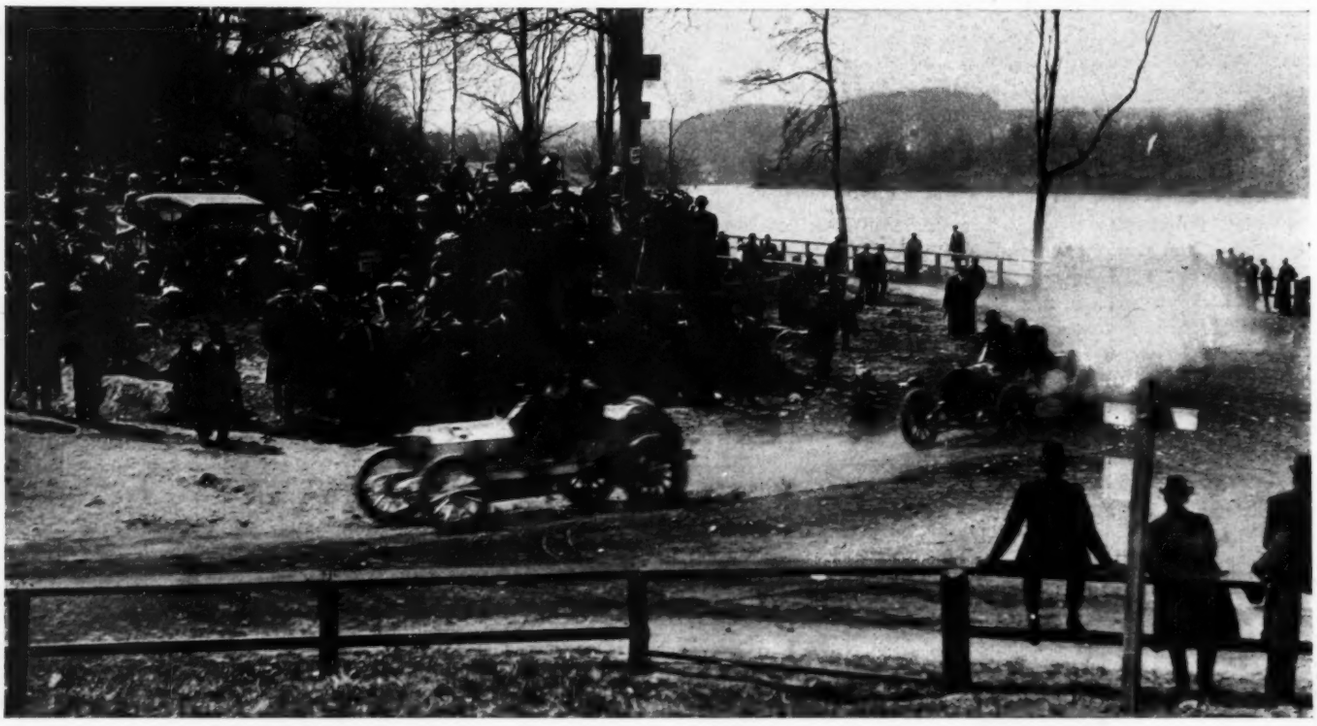
How the Little Things Lost Places.

It is certainly bad enough to have to reflect that nothing more than a mishap of the most trivial nature was responsible for

Bergdoll, the Benz Contestant, Rounding One of the Many Turns.

delay which brought lost honors in its train, but how very much more so is it when, after having completed all but a few miles of the distance, one of those petty little details that is not even considered an inconvenience at other times, crops up to spoil good chances of crossing the line among the first three. Such was the lot of Lytle in the Apperson. The little Apperson had been reeling off the miles like a watch—nothing phenomenal in the way of speed, but demonstrating by every lap that it was displaying in the most striking manner those very qualities which the race was designed to bring out. Lap after lap, it passed the stand with its times for the rounds but a few seconds apart, while the fifth and sixth laps were covered in identically the same time to a second, Lytle taking 40:36 in each case to cover the thirty miles, while the first and second laps were but 13 seconds apart.

Lytle started third and ran so regularly that the Apperson was generally believed to have third at the finish pretty heavily mortgaged, as the Apperson had a clear lead of several min-



One of the Exciting Incidents of the Race—This Scene Is Along the Shores of the New Croton Reservoir.

utes over Vaughan's Stearns at the opening of the last lap. But the little things had not been reckoned with. Lytle's Diamond tires, which had borne up under the terrific strain without a sign of weakening up to the time, stood the racket until the last half of the last lap, when the right rear gave up the ghost between Armonk and Valhalla. The Apperson crew certainly had no cause for complaint on the score of tires, but what little trouble did fall to their lot came at a most inopportune moment.

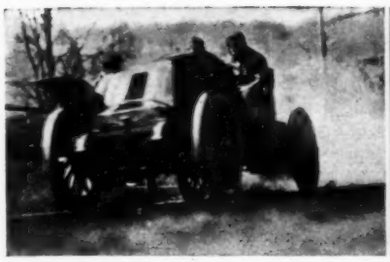
But Lytle still had a comfortable hold on third, even after replacing the damaged tire, and would have had no difficulty in getting home in that position with a good margin if the same evil genius had not continued to pursue him. Immediately after replacing the tire the engine began to sputter and an examination showed that the ignition current from the magneto had been too hot for the points of a spark plug. The process had to be repeated twice, three plugs being replaced, in addition to the tire, all within three or four miles on the last lap.

It is not to be inferred that tires alone were the cause of some of the competitors, whose chances for places among the first five seemed excellent in the early part of the race, after falling behind. Seymour, whose driving of the 50-horsepower Simplex, carrying "No. 21," aroused great admiration, lost more than enough time to prevent him from scoring well, through one of those petty little things that is all the more exasperating owing to its very simplicity. The grease cup on the clutch collar of the simplex ran dry and the clutch heated so that it could not be disengaged. This cost Seymour 13 minutes on the fourth lap. But even at that, he might still have scored had not further and equally simple and aggravating mishaps caused more time to be spent in fussing instead of covering the distance at the good clip which the Simplex maintained throughout the race. Nearing the latter half of the last lap, the piece of hosepipe connecting the radiator and the pipe on the motor loosened and let the water escape. This was quickly made good, but Seymour then found himself on the wrong side of a railroad train at the crossing about half way between the Apperson and Simplex camps. Trains moved so rapidly on race day that this little coincidence cost another five minutes—just enough to prevent coming in fifth—that is, officially, as in spite of these handicaps his running time taken unofficially entitled him to that position.

Although it was true that tire troubles alone were not responsible for the delay, some of the drivers had far more than their share, as witness the experience of Michener and Mulford of the Loziers, Nos. 7 and 9. Thus Michener had to replace three tires and Mulford had to make four good, in addition to a later mishap to his mechanic which put him so far behind that it was useless to continue. Michener was unfortunate in having to replace every one of his damaged tires far from any of the outside assistance that the rules permitted where tires were concerned. On the first lap, a rear went bad right near the stand, costing six minutes. Later he ran two miles on a flat tire, then through the control at Mt. Kisco, this being on the sixth lap, while on the seventh he lost another. A loose cotter pin in the clutch pedal connection also cost him two minutes.

Mulford probably had more tire trouble than any other two drivers put together, as he had to replace a tire in each one of the four rounds that he made. On the fifth round Mulford's mechanic must have neglected to retard the spark, as he was rewarded with a back kick that threw him several feet into the air. Landing on his head on the road he was knocked unconscious. Mulford had to await the arrival of the ambulance and much time was lost.

In view of the unprecedented nature of the course on which



Bernin (Renault).

Mulford (Lozier).

Seymour (Simplex).

they had to compete, many of the drivers figured out a schedule for themselves and stuck to it religiously, despite the temptation to speed a bit when it became evident that schedules did not win races, though they were striking evidence of regularity and reliability. Bernin and Bloch, in the two Renault cars, were good examples of this, the former losing 12 minutes on the second lap through a loose magneto, which sums up the entire troubles of both of the Frenchmen. They suffered no other delays either from their Michelin tires or mechanical causes, plugging their way round steadily at a good average pace.

The little Hol-Tan-Shawmut handled by Hilliard, which was only put in three days prior to the race, after having come over the road from Boston in record time, was another "scheduler" that showed surprising regularity of performance, not to mention lap times, that, in many instances, bettered those of their far more powerful competitors by several minutes. Considering the very short time that had been allowed for getting the car in shape, as its only running-in, outside of the usual factory test, consisted of three days on a stand in a garage, and the fact that Hilliard had hardly an opportunity to practice, much credit is due the car as well as the skillful manner in which it was handled. Its only stop was to replenish the gasoline tank, taking 1 1-2 minutes, while it averaged 46 1-2 minutes to the lap, the slowest being 49 minutes.

Stearns Cars Suffered Odd Handicaps.

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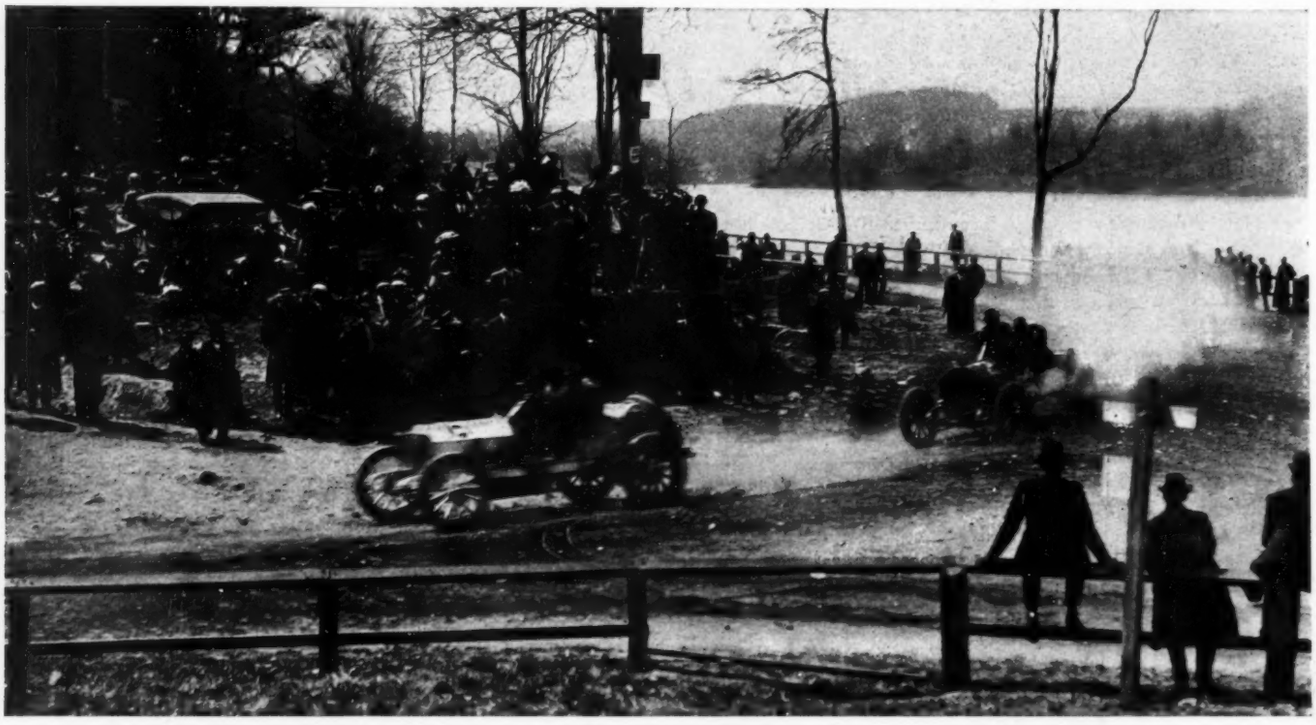
Murphy (Maja) Overhauling a Rival.

Where Pennsylvania Tires Were Supplied.

delay which brought lost honors in its train, but how very much more so is it when, after having completed all but a few miles of the distance, one of those petty little details that is not even considered an inconvenience at other times, crops up to spoil good chances of crossing the line among the first three. Such was the lot of Lytle in the Apperson. The little Apperson had been reeling off the miles like a watch—nothing phenomenal in the way of speed, but demonstrating by every lap that it was displaying in the most striking manner those very qualities which the race was designed to bring out. Lap after lap, it passed the stand with its times for the rounds but a few seconds apart, while the fifth and sixth laps were covered in identically the same time to a second, Lytle taking 40:36 in each case to cover the thirty miles, while the first and second laps were but 13 seconds apart.

Lytle started third and ran so regularly that the Apperson was generally believed to have third at the finish pretty heavily mortgaged, as the Apperson had a clear lead of several minutes over Vaughan's Stearns at the opening of the last lap. But the little things had not been reckoned with. Lytle's Diamond tires, which had borne up under the terrific strain without a sign of weakening up to the time, stood the racket until the last half of the last lap, when the right rear gave up the ghost between Armonk and Valhalla. The Apperson crew certainly had no cause for complaint on the score of tires, but what little trouble did fall to their lot came at a most inopportune moment.



One of the Exciting Incidents of the Race—This Scene Is Along the Shores of the New Croton Reservoir.

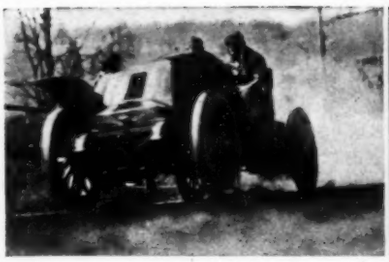
But Lytle still had a comfortable hold on third, even after replacing the damaged tire, and would have had no difficulty in getting home in that position with a good margin if the same evil genius had not continued to pursue him. Immediately after replacing the tire the engine began to sputter and an examination showed that the ignition current from the magneto had been too hot for the points of a spark plug. The process had to be repeated twice, three plugs being replaced, in addition to the tire, all within three or four miles on the last lap.

It is not to be inferred that tires alone were the cause of some of the competitors, whose chances for places among the first five seemed excellent in the early part of the race, after falling behind. Seymour, whose driving of the 50-horsepower Simplex, carrying "No. 21," aroused great admiration, lost more than enough time to prevent him from scoring well, through one of those petty little things that is all the more exasperating owing to its very simplicity. The grease cup on the clutch collar of the simplex ran dry and the clutch heated so that it could not be disengaged. This cost Seymour 13 minutes on the fourth lap. But even at that, he might still have scored had not further and equally simple and aggravating mishaps caused more time to be spent in fussing instead of covering the distance at the good clip which the Simplex maintained throughout the race. Nearing the latter half of the last lap, the piece of hosepipe connecting the radiator and the pipe on the motor loosened and let the water escape. This was quickly made good, but Seymour then found himself on the wrong side of a railroad train at the crossing about half way between the Apperson and Simplex camps. Trains moved so rapidly on race day that this little coincidence cost another five minutes—just enough to prevent coming in fifth—that is, officially, as in spite of these handicaps his running time taken unofficially entitled him to that position.

Although it was true that tire troubles alone were not responsible for the delay, some of the drivers had far more than their share, as witness the experience of Michener and Mulford of the Loziers, Nos. 7 and 9. Thus Michener had to replace three tires and Mulford had to make four good, in addition to a later mishap to his mechanic which put him so far behind that it was useless to continue. Michener was unfortunate in having to replace every one of his damaged tires far from any of the outside assistance that the rules permitted where tires were concerned. On the first lap, a rear went bad right near the stand, costing six minutes. Later he ran two miles on a flat tire, then through the control at Mt. Kisco, this being on the sixth lap, while on the seventh he lost another. A loose cotter pin in the clutch pedal connection also cost him two minutes.

Mulford probably had more tire trouble than any other two drivers put together, as he had to replace a tire in each one of the four rounds that he made. On the fifth round Mulford's mechanic must have neglected to retard the spark, as he was rewarded with a back kick that threw him several feet into the air. Landing on his head on the road he was knocked unconscious. Mulford had to await the arrival of the ambulance and much time was lost.

In view of the unprecedented nature of the course on which



Bernin (Renault).

Mulford (Lozier).

Seymour (Simplex).

they had to compete, many of the drivers figured out a schedule for themselves and stuck to it religiously, despite the temptation to speed a bit when it became evident that schedules did not win races, though they were striking evidence of regularity and reliability. Bernin and Bloch, in the two Renault cars, were good examples of this, the former losing 12 minutes on the second lap through a loose magneto, which sums up the entire troubles of both of the Frenchmen. They suffered no other delays either from their Michelin tires or mechanical causes, plugging their way round steadily at a good average pace.

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How They Saw the Race.—Long before nightfall of the day before the race the metropolitan automobiling fraternity began to make the history of the Briarcliff Trophy contest. A few hours later the general public added the factor of its racing enthusiasm and eagerness to be literally "in at the death," which the conditions seemed reasonably to promise. It was daylight on Friday, of course, before the cars and drivers were to furnish the struggle that had drawn these many many thousands to view the battle of steel, muscle and nerve that had been framed up and the tragic incidents that seemed assuredly imminent. Twenty-two American daredevils were to be recklessly cut loose over a narrow course with almost continuous sharp curves, bounded by dangerous ditches, stone walls, rivers and ponds the whole way, and replete with axle and spring racking and tire wrenching stretches, beside to risk limb and life in the wild scramble. The Briarcliff district is neither as familiar nor as accessible as the Nassau county circuit.

Thursday afternoon cars began to stream out Broadway and through the Hudson river towns. With nightfall their numbers increased, and by midnight there was an unbroken procession of gleaming headlights hurrying courseward. The hour for the closing of the course was an enigma. There had been official pronunciamentos that the entrance to the circuit would be barred between 2 and 3 o'clock, so that the majority cared not to risk missing securing a viewpoint by a past midnight start. As early as 1:45 A. M., a squad of pressmen set out for Tarrytown, where they had been put up for the half-night at the Maxwell-Briscoe factory. The road was then aglow with gleaming searchlights. Turning to the east streams of foot passengers lined the road. The course reached at East View, the midnight scene was one full of fire and life. Stands, large and small, had been erected along the roadside. On every furlong of the road to the start there were parking space speculators swinging their lanterns and hawking their spaces. In places there were bunches of a dozen or a score of cars parked in the skirting fields. Here and there at frequent intervals an isolated vantage point had been squatted upon, and one saw the camp fire of the all-nighters.

Approaching the grand and press stands at Briarcliff, the crowd of cars and people became denser, ending in a hopeless jam of machines and men at the start and finish point. En route were passed sky-larking processions of young men with arm badges telling that they were marshals. It is said that they were the much-boasted militiamen who were to guard the course. To one who had seen the businesslike soldiers at Savannah, it seemed a huge joke to call this military protection.

With the coming of daylight, the throngs of foot passengers from the incoming trains and the nearby towns increased. With rare common sense they climbed the encircling hills and avoided for the most part courting danger by standing along the edge of the road. There were crowds, of course, at the turns, and here the hired guards and volunteer marshals were concentrated, and made a show of keeping the crowds back and in order. The newspaper men en route noted that several of the makers had established parking camps for their customers. There were parking grounds prepared by the Peerless and the American Locomotive people, and the Maxwell-Briscoe Company had pitched a veritable Maxwell camp on a commanding hill.

"No. 13" Almost a Hoodoo for Barney.—Barney Oldfield did not quite get away with his hoodoo number, for Stearns car "No. 13" very nearly justified the universal feeling about the number in the very first lap of the race. It was just 5:30 o'clock in the cold gray dawn of the morning when Barney narrowly escaped being thrown into kingdomcome by the special train from New York on the Putnam division at the State road crossing, half a mile from Kitchawan. A special from New York, consisting of an engine, tender and seven cars, whistled for the crossing and bore down upon it. Just as the whistle sounded, the spectators were horrified to see a racing machine bearing the fateful "13" come tearing along at a speed of over 50 miles an hour and loom up through the fog from around the curve which hid the track from view. The flagman made a jump for the track and wildly waved to the engineer to stop. The train itself was bowling along at a good trip, and, in spite of the fact that the engineer promptly clamped on his airbrakes and reversed, the train slid along the track until the cowcatcher stood half way over the crossing. There were just two things for Barney to do. He had either to swerve and go over the rails below the crossing, thereby courting instant mishap, or take a chance and skim by the cowcatcher as it protruded across the right-of-way. In a second's thought he chose the latter, and those present were treated to a bit of daring and clever steering, for Barney, to make sure, put on more speed and went at it. The off-wheels of his big Stearns grazed the projecting cowcatcher as he went by, and it tilted the machine until it assumed an angle of 45 degrees. All held their breath, but the minute the car left the cowcatcher it righted itself, and Barney was off, cigar still in mouth, while the engineer reversed his train farther up the track.

Confusion on the Grandstand.—Stories of the demoralization in the conduct of the grandstand are afloat. There would seem to have been neither head nor tail to the management of this important feature of the race. The ushers proved inexcusably incompetent in seating those who had bought tickets. Seatholders boldly preempted boxes and refused to be dislodged, and no one appears to have been available for an appeal or redress. The wife and several women friends of one importer, who had several cars in the race, were practically fired out of his boxes back into the seats by a party of male and female roysterers of the "Tenderloin" type, who showed corresponding number reserved seat coupons and insisted that they entitled them to the box. A bearded usher, who was summoned by the importer, accepted the addition of another drink to his ample cargo, and was quickly won over to the side of the intruders. Even when the importer left his 'phone to seek relief, he could find no one in authority from whom he could get satisfaction, and had to submit to his wife and her guests being driven from their boxes.

Referee Pardington, Chairman Morrell, Starter Wagner, et al.

AFTER the drawing for starting positions had taken place, and I had looked over the order of the start, I decided that Cedrino of Fiat No. 2 was the man that I had to beat, and that if I didn't get him in the first couple of laps I would never win. So when Wagner gave the word "go," I started right out and drove every curve the limit, and got every bit of speed out of the car that there was in it. There was a fog bank that was very bad, and my perfect knowledge of the road undoubtedly gave me a great advantage over the other men ahead of me, who had to "feel" their way through the mist while I drove wide open, and knowing just where the corners were, was able to shut off, scoot around, then open up again, and rush onward. I caught Lytle and Sartori right after leaving Eastview. Cedrino had already passed these two. I passed Cedrino about twenty-five feet out of Pleasantville turn.

I drove very hard for possibly a couple of miles, and, after asking Marquise if everything was clear behind, I began taking it a little easier, and drove carefully from then on until the end of the race. We had a private telephone wire from the stand to a signal board at Eastview where I got my relative position and time during the entire race, so I knew just how hard I had to drive. Also at the Mt. Kisco control Mr. Moscovics, of the Allen-Kingston, very kindly showed me a score card on every lap and kept me posted as to all the news of the race.

I had no tire trouble at all, as I cut out all "grand stand" corner work, drove all corners easy and never skidded an inch at any time. My brakes were new, and the shoes wore down until they wouldn't hold, and Marquise got down on the floor boards, and, leaning under the car, tightened them up until they held perfectly. A strap which we had on the back of the car came loose, and threatened to run into the rear sprocket; Marquise climbed out of his seat over the gasoline tank to the end of the car and then back again, and we didn't have to stop even for that. We stopped on our sixth lap and filled up our tanks at our control, just outside of Mt. Kisco; this was the only stop we made while outside of the Mt. Kisco control.

A great deal of the credit of our victory belongs to Marquise, who sat in the mechanic's seat. Being naturally careful, he kept me from getting reckless at any time, and a good man with you is all your race.

From what I have seen of road racing I think that a driver should never be instructed to hold back, for a race starts right from the word "go," and time lost can never be regained. No race has been won from laying back, unless the leading cars broke down, and then it's only a gamble. So, to talk of going easy for half a race and then going out to make time, is too hard on the driver, for the others have already gotten a lead that may prove impossible to cut down.

My only regret is that I didn't have the wheel of an American car, and I hope some day to pilot an American car to victory against the best that Europe can turn out. The E. R. Thomas Company is sending over a Grand Prix entry, and I know that all true Americans will wish me the greatest success, for I am going to drive it.

THOMAS SECURES STRANG FOR GRAND PRIX.

Louis Strang, who followed up his victory in the Savannah Cup race by winning the Briarcliff trophy, and thereby came pretty near preempting the top rung of the American racing ladder, is to represent this country in the Grand Prix. Harry S. Houpt, acting for the E. R. Thomas Motor Company, with characteristic hustle, has secured his services and those of his mechanic, J. B. Marquise, as crew of the Thomas Candidate for international honors in the great contest in France on July 8. Mr. Houpt will sail with Strang and Marquise on May 15, see to securing training quarters, and be their mentor and manager in the race and during the preliminary practice. The securing of Strang and Marquise was made possible through the generous

Poole (Isotta) Making the Dust Fly at One of the Soft Turns.

Once More Barney Oldfield, Making an "S" Turn.

Roberts (Thomas) Making One of the Picturesque Turns.

and sportsmanlike conduct of J. H. Tyson, with whose Isotta car they won both the Savannah and Westchester races, in granting them a leave of absence for the purpose.

Two Thomas cars will be sent over. Strang and Marquise will go to the E. R. Thomas Motor Company's factory at Buffalo to look them over before their shipment.

It is said that A. L. Riker had made advances to Strang with a view to getting him to pilot a Locomobile car, which he thought of entering under the double fee provisions of the rules as to late nominations. Whether Mr. Riker will persevere in his plan to have the Locomobile Company represented in the Grand Prix remains to be seen.

Strang Has Driven Many Makes of Cars.

The story of Louis Strang's automobile life discloses a wider familiarity and experience with motor cars than one would look for in one so young, for he is but twenty-three years old, having been born at Amsterdam, N. Y., August 14, 1884. He was educated there and later at a private school at Scarboro, near the Briarcliff course. His mother, who was a woman of considerable property, lost her money in Chicago gas stock and Louis had to go to work. Later his mother died, leaving three sisters for him to support, one of whom is now married. He started as a typewriter with H. H. Franklin, who was then a maker of them, and thus later became familiar with autos.

Strang became a chauffeur in this city, first driving Franklin No. 4. He then went with H. P. Robbins, and toured Europe as his chauffeur, a Panhard having been purchased on the other side from Henry Farman, the racing man. On his return to this country, Strang demonstrated the French Berliet for Mendel, Dale & Co., its American agents at that time. His next employer was H. O. Havemeyer, the "Sugar King," who leaned toward the Mercedes.

Strang got his first racing experience as demonstrator for Joseph Heller, an importer, through driving his Pipe car in the straightaway races at Long Branch. He next went with E. C. Hoyt, president of the Leather Trust, and then returned to demonstrating under E. B. Gallaher, importer of the Richard Braier. Then he looked after a pair of Renaults for C. B. Hudson, a race track man, the intimate friend of John A. Drake.

Walter Christie next secured him for his mechanic in the elimination trials and Vanderbilt Cup race of 1906. Strang then looked after Robert Maxwell's Panhard.

Last year the Briarcliff Trophy winner was Christie's mechanic in the Grand Prix. On his return he went with the Pilain agency, driving one of its cars in the 24 hour race at Brighton Beach last season. After this he was chauffeur to E. C. Clark, the son of Bishop Potter's wife, whom he left to go with Christie in his Southern track racing tour. After Christie's accident, Strang drove the car.

John H. Tyson, the twenty-two year old sportsman, was his next and is his present employer. Strang was sent to Savannah to drive the Isotta Fraschini that Mr. Tyson had ordered direct from Italy. It was not on hand when he reached Savannah, so he studied the course in a touring car. How he won is history.

Strang's practice for the Briarcliff race consisted of six rounds of the course in a Franklin and one try-out lap in the Isotta he was to drive in the race. "I attribute the greater part of my success as a driver," said Strang, "to the instructions I received from Emil Stricker. Stricker came to this country when the Daimler Manufacturing Company bought the American rights to manufacture the Mercedes. Later he was a demonstrator for the late Alexander Fisher, who then imported the Rochet-Schneider. It was while he was with Mr. Fisher that he gave me the driving lessons I have always remembered and followed. He taught me how to turn curves, how to hold the steering wheel at the bottom, and above all not to touch any lever until I was ready to use it. Stricker has now an interest in the Porthos Company, in Germany. He drove a Porthos in the last Grand Prix, and now we will be fellow-competitors."

Lytle (Appersbn) Burning Up the Road.

Stone Fences Supplied Safe Vantage Points.

A BUDGET OF NEWS FROM THE FRENCH CAPITAL

By W. F. BRADLEY.

PARIS, April 25.—As the result of the run from Paris to Nice and return, a distance of 1,400 miles, the spring wheel competition has once more proved that automobiles are not entirely dependent on pneumatic tires, but the test has also brought to light the fact that all the systems put on the market are not suited for rough usage. There was practically nothing that was new in the third annual competition, the systems represented having all been shown to the public in the annual exhibitions at the Grand Palais.

The winner of the competition is Ducasble, which finished without any repairs, made the fastest average time and was in good trim at the end. It is a tire which has been on the market for some time, and was used on one of the French cars starting from New York on the run to Paris. In this case, however, the tires had to be changed for pneumatics before Cleveland was reached, and the car abandoned later. This particular substitute has been more fortunate in the French test, for three sets of tires finished at the head, and will probably get first positions when the committee has finished its examination. The Ducasble tire is composed of a series of small air chambers, each one of which is emptied of its air when put under pressure and filled by suction as soon as weight is removed.

Sider tires stood the test well, if one may judge by the condition of the bandages of the four cars equipped with this make. A Darracq and two Rebour runabouts, as well as an Alcyon runabout, finished the run without any trouble, and had their tires in excellent shape on arriving at Paris. This tire has all the earmarks of a pneumatic casing, but instead of being filled with an air chamber has a series of circular sheet steel springs with a layer of rubber between each and united by a chain. The method of mounting is the same as for a pneumatic tire. Instead of an inner tube, however, there are circular blocks of wood, which act as a wedge between the heels of the tire, keeping it fixed on the rim, and are themselves secured by bolts passing through the felloe. In the case of a very severe blow, it is not the rim but the block of wood in the place usually occupied by the air chamber which would receive the shock.

Masses of Springs Are Being Discarded by Wheel Makers.

Spring wheels of the type which were so much to the front a few years ago, obtaining their elasticity from a mass of springs, are very little seen now. A proof of this is obtained in this competition, where the three most successful makes have ordinary fixed spokes and some special type of rubber or spring bandage, or a combination of the two. One other make which may be put in this category is the M. Y. G., composed of heavy blocks of rubber perforated transversely. There are twelve blocks for a large wheel, each one being held by means of a bolt passing through the felloe. Two examples of this system were shown, one being on a heavy Delaunay-Belleville limousine with inside steering, and the other a large Peugeot touring car. The fastening of some of the blocks appeared to be somewhat defective, but otherwise the wheels on both cars were in good condition.

Among the double-rim type was the Metallo-Elastic, which obtained its elasticity from a series of rubber balls in a cage between the two surfaces. On a small car the system had acted very satisfactorily, one of the wheels dismounted for inspection being in excellent condition. On a heavier Darracq car, however, the friction had caused heating to such an extent that a leather band holding the balls together in a series had been burned through, and the balls themselves had begun to show serious signs of breakdown.

There were two types of pivoting spring spokes which managed to finish the run, but neither presented any very attractive features, being much too heavy for ordinary use and not suitable for fast work. Of the nineteen cars which started from Paris, fourteen returned, but of these several had suffered penalization en route, the official finishers being but nine.

S. A. Miles Arrives in Paris, Pierce Arrow Route.

There is a genuine fear among automobile dealers, garage proprietors and hotel proprietors in Paris, and generally throughout France, that the number of American visitors this season will be smaller than usual, owing to the financial depression, which appears to have shocked Europe much more than America. The fear will probably be ill-founded, for automobilists from across the Atlantic are already arriving, though the season has hardly begun.

S. A. Miles, general manager of the N. A. A. M., arrived here recently on his 40-horsepower Pierce Great Arrow car. He is accompanied by Mrs. Miles, and had as a traveling companion from London to Paris Arthur Lumsden, manager of the Goodrich Tire Company's London house. After several days in Paris, made busy by visits to aeronautical and automobile factories, principal among them being the huge Renault establishment at Billancourt, where Szisz inquired eagerly after the prospects of another Vanderbilt race, Mr. and Mrs. Miles left for the Château district and the south of France. In a couple of months they will probably return North, pass through Paris, and make a brief run through England, before embarking for America.

Mr. Miles expressed his delight at the really practical manner in which the various associations in Europe made touring for foreign visitors an even simpler matter than it is in their own country. In this connection, Victor Breyer, the A. A. A. delegate in Paris, is now installed in his new offices, at 4 bis Rue Descombes, and reports a complete organization for members of the association who need touring information and assistance in Paris.

Secretary Lambert, of the St. Louis Aero Club, has been in Paris several weeks, accompanied by his wife, and has naturally spent much time at the French club's aero ground and at the flights of Delagrange, Farman and others in the neighborhood of Paris. Last week Secretary Lambert made an unaccompanied ascent in the *Cythere*, of 600 cubic meters capacity, rising from the Saint Cloud Park and descending at Limours.

French Makers and the Vanderbilt Cup Race.

French constructors appear to have just awakened to the fact that a Vanderbilt Cup race will be held this year, and, with the awakening, is a realization that the conditions are not what they would prefer. The large majority of builders ask why the international rules, adopted by the Ostend conference, are not adopted for the great American race. In view of the fact that the A. C. A. delegates were present at the conference and voted these rules, French automobilists are at a loss to understand why these international conditions have only been adopted in a very limited degree. It should be explained that the average Frenchman does not appreciate the shades of difference between the A. A. A. and the A. C. A., and argues that since America voted the rules, America ought to live up to them. No preparations whatever have been made for the race, the general impression being that the announced conditions are tentative, and that later the 155-millimeter rule will be adopted. It is doubtful, indeed, if any foreign representation can be obtained under any other conditions, for no factory in Europe intends to build more than one set of racers for the 1908 season. The desire is expressed in certain quarters that there be a progressive reduction of the entrance fee when two or three cars are entered by one firm. This has been done for the Grand Prix and the A. C. F. voiturette race this year, and these are considered to have established a precedent that should be followed in the Vanderbilt race.

"RUBBERNECK" WAGONS WANTED IN TEXAS.

Texas is nothing if not progressive, and the prevailing spirit is the same whether it happens to reside in one of the larger cities or in one of those places that it is difficult to locate on the map even with the aid of a microscope. Certain evidence of this is to be found in the fact that, after much investigation, "Searcher No. 12," of the New York post-office, wrote across a particular piece of mail matter, "Try 949 Broadway." The envelope in question bore the following (it would be a stretch of courtesy to call it an address):

Automobile co
The American Rubberneck,
New York.
care of W. E. Sebree
Originator

Only the words in the upper righthand corner and the direction of the postal searcher prevented the missive from being sent to that vast storehouse of unanswered correspondence, the "Dead Letter" office, and in that case the following gem would never have seen the light.

W. E. SEBREE:

Sir.—You will find enclosed a clipping from the "Woman's National Daily," a paper published in St. Louis, of which I am a subscriber, and seeing your "ad," write you. I am trying to find an automobile house that can put me up which I so much desire in this line for the people of this country. First, I want a car that will carry at least fourteen passengers and 1,000 pounds of baggage and travel over the hills, and pull the sand and mud. I have several men wanting machines for different purposes—two or three for stage lines—also they want a large and substantial auto, something to rely on in all constructions. Now I mean business. Send all your cuts, catalogues, and special prices to agents at once. Or send a man here at once to help me choose these sales they are anxiously awaiting some one who has the machine that can and they will not be afraid to demonstrate them. You and I can do a business here at once for ourselves to start the agency for Texas. Honorably yours for business.

B. W. HONEYCUT.

Brady, Texas.

The clipping referred to is headed "Rubbernecks for London," and reads as follows:

London, April 7.—The American rubberneck sightseeing automobile is to be given a chance in London. W. E. Sebree, originator of the rubberneck wagon in New York, is behind the plan to install them here. Three of the big cars, carrying 37 persons, in charge of megaphone instructors, will be installed. If they prove successful more cars will be installed and the innovation will then be tried in Paris and other European capitals.

TAKING CARS ACROSS THE BORDER.

Touring across the border in Canada will be facilitated by the conditions now prevailing. According to "The Official Automobile Blue Book," from which the following information is taken, automobiles may now be imported into Canada, duty free for three months, the importation to be reported on a prescribed form at the custom house at the point of entry, an examination and appraisement being made. An invoice showing the selling price of the car must be produced, a cash deposit of $25 made, and a bond signed in double the amount of the estimated duty.

The principal points of entry are at Niagara Falls, Ont., reached by way of Buffalo, N. Y., and Windsor, Ont., across the river from Detroit, Mich. For these points the C. S. Warner Company, 31 Clifton avenue, Niagara Falls, Ont., will arrange all details including bond, registration, driving license and the like at a cost not exceeding $10, and no cash deposit will be required. Quebec, P. Q., is another important point which may be reached via Rouses Point, N. Y., to Lacolle, Que., St. Albans, Vt., to St. Armand, Que., Malone, N. Y., to Athelstan, Que., Ogdensburg, N. Y., to Prescott, Que., Newport and Richford, Vt., to Mansonville, Que. and Lowellton, Me., to Beauce, Que.

New Brunswick may be reached by way of Vanceboro, Me., to McAdam Junction, N. B., or Houlton, Me., to Woodstock, N. B., while Nova Scotia, being practically surrounded by water, would generally be approached by the tourist on a steamer and there are custom houses at all ports of entry. Tourists into Quebec who have not previously secured registration and driving permits may obtain them upon entry into the Province from the following customs, or provincial officials:

Athelstan	Wm. Saunders, Sub-Collector.
Coaticook	J. B. Daly, Collector.
Comins Mills	W. C. Kingsbury, Sub-Collector.
Cookshire	A. Ross, Collector.
Dundee	John D. McMillan, Sub-Collector.
Frelighsburg	J. H. Baker, Sub-Collector.
Hereford	Austin Hunt, Preventive Officer.
Lacolle	J. A. Paquet, Sub-Collector.
Lake Megantic	A. B. Gendreau, Sub-Collector.
Mansonville Station	H. A. Gilman, Preventive Officer.
Noyan Junction	W. M. Jameson, Preventive Officer.
Phillipsburg	P. E. Luke, Sub-Collector.
St. Armand	E. A. Bourret, Collector.
Stanstead Junction	C. F. Bellam, Sub-Collector.

Collectors of Provisional Revenues.

Quebec	J. E. Fortier.
Montreal	S. P. Leet.
Sherbrooke	Morkill & Lefebvre.
Cowansville	J. McCrum.
Hull	T. W. Symmes.

Inspector of Provincial Revenue.

Lévis	T. A. Poston.

They may also be obtained from the department at Quebec by applying to A. Brosnan, comptroller of Provincial revenue, treasury department, Quebec.

A. S. M. E. TO DISCUSS AUTO CLUTCHES.

At its next regular monthly meeting, to be held in the Engineering Societies building, 27 West Thirty-ninth street, the American Society of Mechanical Engineers will devote its session to a paper on "Clutches, with Special Reference to the Types Used on Automobiles," by Henry Souther. The development of the various types will be illustrated by means of lantern slides. The meeting will afford an excellent opportunity for the full discussion of the design and use of clutches for all purposes, and it will be continued at the semi-annual meeting of the society at Detroit, June 23-26. The members of the Society of Automobile Engineers have been invited to join in this discussion at Detroit, the third annual summer meeting of the latter being scheduled for June 25-27.

NEW BOOKS FOR AUTOMOBILISTS.

European Automobile Annual.—For the third year in succession Baudry de Saunier's "Annual" of the European automobile industry makes its appearance, similar in general appearance to its predecessors, but enlarged and modified in detail. The compiler of the Annual first seized upon the idea of producing a trade directory giving in alphabetical order everything that the private automobilist or the dealer might possibly desire to know about an automobile or the industry in Europe. Proof of the need of a volume of this nature is found in the sale it has had in France and the fact that foreign publishers have not hesitated to make literal copies.

As a reference book for firms having relations with France and other parts of Europe, the "Annual 1908" is a particularly valuable work, for it gives in the most accessible manner possible information on every constructor in France, the models he produces, explanation of technical terms, the results of all races, lists of members of all the important automobile clubs, the names of all agents and dealers, brief sketches of notable persons in the automobile industry or sport—in brief, it is a complete handbook of the French automobile industry, compiled, for convenient reference, in alphabetical order. The volume, which is well illustrated and handsomely produced, consists of almost a thousand closely printed pages. It is published by L. Baudry de Saunier, 20 Rue Duret, Paris.

LETTERS INTERESTING AND INSTRUCTIVE

INTERESTING QUESTIONS ABOUT A FORD.

Editor THE AUTOMOBILE:

[1,331.]—I have some interesting questions which I wish to have answered through "Letters Interesting and Instructive." I have a Ford, Model F, 16-horsepower, double-opposed motor, on which the pistons were found to be worn so badly that I had new ones provided. The cylinders were also rebored and the valves ground in at the same time. The engine was then reassembled, valves adjusted and timed, and the piping put back in exactly the same manner as it had been previously, all the joints being made tight.

The engine now compresses well on one cylinder and only slightly on the other cylinder, but the cylinder which has poor compression develops as much power as before, while the cylinder with good compression has scarcely enough power to run the engine. A Schebler carbureter is employed, and the suction of the air through it is the same, apparently, for each cylinder. What is the trouble?

Jacksonville, Ill. F. C. CARRIEL.

Without any further data than what is given in your letter, it seems to us that the trouble can be traced to improper valve and ignition timing. We should advise you to check this over very carefully and see that both the inlet and exhaust valves open and close at exactly the right time; also that the ignition is timed right, as the latter alone might account for the lack of power. You do not say anything about the valve-operating mechanism having been renewed, or checked up for wear, and the difference in the length of the valve stems, the wear on the cams and rollers, etc., may be sufficient to throw the timing out considerably, although it apparently is correct. It will be evident that if the exhaust valve opens too soon much of the power will be lost; or, if the inlet valve remains open too long, much of the charge will be ejected and the compression will naturally seem to be poor when the engine is turned over by hand.

Granted that the cylinders and pistons are tight, which should certainly be the case in view of the work that you have had done on the car, there appears to be little else that can be responsible for the trouble, and we think that if you will go over this part of the engine you will not be long in finding the cause.

STEERING OF THE CHRISTIE AND THE CABS.

Editor THE AUTOMOBILE:

[1,332.]—In a recent discussion, I heard it stated that Walter Christie's 130-horsepower racing car, which he used in the 1907 Grand Prix, was steered by the rear wheels. Kindly let me know if this is so; also if the electric hansoms which are used in New York as taxicabs, steer by the rear wheels.

Garden City, N. Y. J. BERNARD MILLER.

Christie's racing car, as well as all the cars of the front-driven type that he has turned out, have been built to steer by the front wheels in the usual manner. These wheels are connected to the driving shaft, which is the crankshaft of the motor itself, when on the high speed, through the medium of universal joints which compensate for their lack of alignment when turning corners. Some of the original electric cabs used in New York City were designed to steer by the rear wheels, but we are under the impression that very few, if any, of this type still exist.

ADVANTAGES OF TIRE-FILLING COMPOUNDS.

Editor THE AUTOMOBILE:

[1,333.]—Please give me your opinion if it is advisable to use tires filled with such compounds as glue, glycerine and other ingredients mentioned by you in a recent issue. What are the advantages and disadvantages of such fillings? G. TREIMER.

Davenport, Ia.

The chief advantage of using tires filled with such compounds is that they are proof against punctures and similar forms of injury. On the other hand, they have the disadvantage of greatly increased weight, loss of resilience to a certain extent, and the difficulty of repairing the tire after it has been filled with these compounds. Probably there are some readers who have had extended experience with tires that have been filled and can give more definite details of both sides of the subject.

ABOUT CONNECTING UP ACCUMULATORS.

Editor THE AUTOMOBILE:

[1,334.]—The manufacturers of a certain car place emphasis on their instructions to always connect up the storage battery in the same way, the positive pole to the coil and the negative to the ground. Another authority claims that in passing from one point to another the electric current carries particles of metal with it—e.g., in the case of timer, vibrator points and spark plugs, one point would be eaten away and the other built up. Hence, he advises reversing the poles of the battery each time it is replaced Is there any merit in this, or is there any reason for keeping the battery always the same? H. F. CLARK.

Ventura, Cal.

There is no reason that we know of why the battery connections should always be the same in order to obtain satisfactory ignition service. The authority in question is quite correct, and this action is particularly noticeable in the case of the coil vibrator contact points, less so in the case of the timer, and is absolutely a negligible factor where the spark plug is concerned, owing to the infinitesimal quantity of current passing at the gap of the latter. The action is exactly the same as that of the ordinary arc light, which, when trimmed, is supplied with a negative carbon but half the length of the positive. At the end of its usual period of burning, there is scarcely anything left of the positive carbon, while the negative has hardly decreased in size at all. The action naturally depends upon the amount of current passing, *i.e.*, the amperage. We think it is good practice to reverse the connections each time the battery is replaced.

LEADING AN INQUIRER ASTRAY.

Editor THE AUTOMOBILE:

[1,335.]—It seems that your answer to Mr. Sharkey, Letter No. 1,311, is misleading. His question is plain, though he evidently does not understand the ignition system. I think you will agree with me that his car is all right as it stands, as disconnecting the spark plug could not affect the vibration of the coil.

Cleveland, O. ANOLDTIMER.

We do not agree with you that the car in question is "all right as it stands," by which you mean its condition as described by the inquirer in question. Your statement that "disconnecting the spark plug *could not* affect the vibration of the coil" is akin to that of the young attorney called upon to get a client out of jail. "Why, man alive, they can't arrest you for that." "I know that," replied the client, "but they have arrested me." Mr. Sharkey states, "When the engine is turned over with the terminal disconnected, the coil vibrates." We informed him that this should not be the case, in answer to his direct inquiry to that effect, and also tried to suggest what appeared to be a cause for it. It goes without saying that this may not actually be the cause of the trouble, but apart from this, we do not consider the answer at all misleading and would like to hear more about it.

INTERESTING CAPITAL IN A NEW STEAMER.

Editor THE AUTOMOBILE:

[1,136.]—Do you consider there is a good field open for a steam automobile of various models, built as good as the best steam car made to-day, with various improvements, such as a kerosene burner, no air pressure, perfect separation of oil from condensed steam, condenser sufficient to condense all the water used, possibly a steam turbine; but if not, a new compound steam engine?

If so, do you suppose it would be possible to interest fifty or a hundred thousand dollars for such a proposition? STEAM.

Nyack, N. Y.

There is no apparent reason why a well-built steam car along the lines you indicate, turned out by a progressive concern, should lack for a market. Merely because the cars of this type at present being built are in the minority, so far as the number of makers devoted to steam is concerned, is no reason to infer that this is due to the fact that the market for such a car is very limited. It is not easy to build a successful steam car, and this

probably has a good deal to do with it. The possibility of interesting capital is something a bit beyond our ken, but we have no doubt that the right man could do it.

MATERIAL FOR AUTO STEERING KNUCKLES.

Editor THE AUTOMOBILE:

[1,337.]—Please inform me through "Letters Interesting and Instructive" as to the properties required in metal for front axle yokes and knuckles. I suppose toughness and hardness are both required. Is manganese bronze a good material for this? In what respect does it differ from better grades of cast and drop forged steel?

Quitman, Ga. W. MATHEWS, M.D.

Maximum toughness and hardness are both prime requisites for material to be employed in the construction of steering knuckles and front axle yokes of an automobile. We have known of one or two instances in which manganese bronze has been employed for front axle yokes, the yokes being cast integral with the axle in one piece. So far as we know, the same material has not been used for making the steering knuckles. It has not been extensively employed owing to the greater weight necessary to attain the same result as compared with drop-forgings of alloy steel. Cast steel would not be a good material to employ for steering knuckles, although it has doubtless figured in this rôle on some of the cheaper cars. The parts in question form such a vital factor in the safety of a car that no material can be too good for them. Both the tensile strength and elastic limit of the alloy steels employed for automobile work are higher than is ordinarily attainable with manganese bronze castings, so that drop-forgings of the former naturally weigh much less for the same strength.

ELECTRICAL THEORY OF THE METER QUESTION.

Editor THE AUTOMOBILE:

[1,338.]—In regard to letter No. 1,292, I may help you a little. The current flowing in any circuit is the total voltage divided by the total resistance of the circuit. Let us suppose that the voltage of four dry cells is 5.2 volts, their internal resistance plus that of the primary of the coil and the wiring, 4 ohms. If the American ammeter had a resistance of 5 ohms and the French ammeter 2 ohms, which is relatively possible, the total resistance of the primary circuit when the American meter is used would be 9 ohms and the current $\frac{5.2}{9} = 5.8$ amperes, and 6 ohms when the French meter was used, giving $\frac{5.2}{9} = 8.7$ amperes. Both meters might be correct, providing the reading indicated was 5.8 and 8.7 amperes respectively. I have taken values merely to illustrate my point.

Furthermore, the tests made do not show much. To be reliable tests, both instruments should have been connected in series with a steady source of current, such as a storage battery, and both instruments read at the same instant. If this was done when the given readings were taken, it only shows that the instrument differs; it does not show which was correct, unless the following information was also secured: The voltage across the terminals of the battery, while the ammeters were being read, and secured by means of a suitable voltmeter that is known to be correct, and the correct resistance of the circuit. This latter should have been measured by a Wheatstone bridge that is known to be correct. Then the correct current could have been calculated. Or an ammeter of suitable range and known to be correct could have been connected in series with both the French and the American instruments, and all three read at the same time.

It may be well to state that the instruments sold for measuring the current from primary cells or storage batteries by automobilists are not usually much better than mere current indicators. For this purpose they are all right and good enough, but they seldom give the current correctly in amperes; in other words, they are not correct reading ammeters. If one has such an instrument and knows what indications it should give for the successful operation of his coil, good ignition, and fair life for his batteries, he is fortunate, and can then make good use of his instrument. With the same number and kind of batteries, its reading is approximately proportional to the current in amperes, probably close enough for practical purposes.

There is another source of error that I have not mentioned, and that is the inductance of the meters. In a primary circuit, the current is rapidly interrupted and the instrument having the greater inductance would produce the greater reduction in the strength of the current, and hence tend to give a smaller reading, unless both instruments had been calibrated with currents interrupted at the same frequency or rate. H. S. WEBB.

Scranton, Pa.

FIVE YEARS' SERVICE WITH A CADILLAC.

Editor THE AUTOMOBILE:

[1,339.]—I am interested in your reply to the letter No. 1,312, from Mr. Harrington, in your issue of April 16, about repairs to a Model H Cadillac. I have driven a Model H every year since I bought her in 1903, and she runs better now than she did at first. Of course, I have had her overhauled every winter and worn parts replaced. Last summer I took her on a long trip through Northern New England and a little way into Canada, making a tour of the White Mountains on my way home, and though she has only one cylinder, I found that she could go anywhere that the big fellows could with their four and six cylinders.

I have had the same experience with a worn piston and rings that Mr. Harrington has, and the only thing to do is to buy a new piston. It will cost four or five dollars and the rings eighty cents apiece. If he tries to turn new grooves in the old piston and make special rings, it will certainly cost more, and besides he will always have to have special rings made afterwards, which will cost more.

I have always used medium or light grade Valvoline oil in my engine, and it gives good satisfaction. The great secret of successful lubrication of this engine is to keep always enough oil in the crankcase to cover the bottom from 1-4 to 3-8 of an inch deep. I used to take off the cover of the crankcase and measure the depth of the oil every day, but now I have a drip cock arranged in the bottom of the crankcase and I can keep the oil at the right depth.

I don't think the popping Mr. Harrington asks about is in the carbureter. In all my experience with the Cadillac I have never had a backfire through the carbureter that I know of. In my opinion the popping is caused by the spark plug not being inserted right. The plug in this engine is a special one, about two inches in diameter, and if any dirt gets between the engine and the plug, or if it is not seated properly, a little space is left through which some of the exploding charge will come and make an unmistakable "pop." This is especially so when a heavy load is thrown on the engine, as in starting, or climbing a stiff grade, for then the explosions are stronger. When the engine is running light, the explosions are often not strong enough to get through the space between the spark plug and the engine as above.

Hartford, Conn. ARTHUR PERKINS.

STEEL TIRED STEAMER SOON ON THE ROAD.

Editor THE AUTOMOBILE:

[1,340.]—My steel tired auto is set up and I am now setting the engines. They are designed to set upright. I am laying them down in a tight box under the floor with a leather end to the box and with two holes for the chain to pass through.

All the automobile men here tell me that it will not work without a differential. I have proved that it will by this simple experiment. I turn the two front wheels as far as they will go, then with one finger hooked on one tooth of the sprocket on drive axle I can run it across the floor and see the wheels slip. The auto with engine weighs 925 pounds, the boiler 300. The day will come when steel tires will be as common as steel-tired wagons and no differential. The actual saving over a good set of auto wheels, rubber tires, and a good differential is about $500, and when finished the steel wheels will not burst and kill people by going in the ditch. Soon as I get my auto finished, in May, I will run it to New York on purpose for you to inspect. Fifty men interested in automobiles have called to see my auto in its construction and all speak well of it.

Oneonta, N. Y. M. W. HAZELTON.

"PATHFINDER'S" AVOIDANCE OF JERSEY.

Editor THE AUTOMOBILE:

[1,341.]—It is with much pleasure that I read "Pathfinder's" description of his New York-Philadelphia trip in the April 23 issue of "The Automobile," as I have greatly enjoyed the same route for many years past—both by bicycle and White Steamer—and can highly recommend this route for beauty and pleasure. Some variations can be made, and a better stopping place for the night cannot be found than Peters' Hotel at Bushkill. The drive through the "Gap" is most beautiful and enjoyable, and is just as fascinating to me as it was twenty-five years ago.

From Portland, an easier route is by way of Nazareth, Bethlehem, and via the Bethlehem pike to Chestnut Hill, Philadelphia, to Pelham, and through Fairmount Park to the center of the city. As this is an easy two days' trip, I would advise turning around after passing through the "Gap" and back to the center of the village, then turn left through the beautiful Cherry Valley to Saylorsburg, Wind Gap, and Nazareth, and as above to the city.

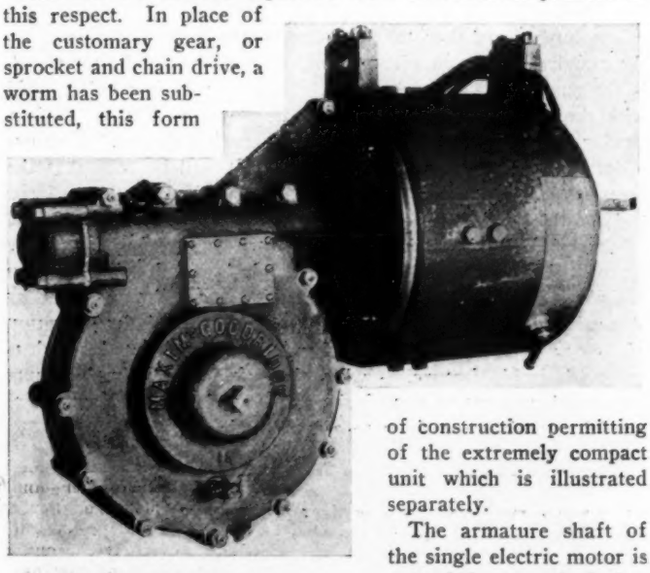
Tourists from New York for Wilkes-Barre and Scranton can avoid "Jersey justice" by "Pathfinder's" route to the Water Gap and Stroudsburg—or Bushkill to Stroudsburg direct—then to Bartonsville, and over the beautiful Pocono Mountains to Pocono Summit; left through Stoddardsville to Wilkesbarre, or right through Elmhurst and the Boulevard to Scranton. GEORGE E. FLING.

Germantown, Philadelphia.

Maxim's Re-Entry into the Electric Field

Hiram Percy Maxim in His Latest Electric Creation.

SIMPLICITY and compactness distinguish the new Maxim and Goodridge electric, of which the first representative forms the leading illustration on this page. It has been a matter of common knowledge, ever since Hiram Percy Maxim resigned as chief engineer of the now defunct Electric Vehicle Company, last summer, that he and T. W. Goodridge were working on the design of a new electric for which some new features were promised. That the promises have been fulfilled is evident upon a review of the specifications of the power plant of the new car, which marks a decided departure from conventional practice in this respect. In place of the customary gear, or sprocket and chain drive, a worm has been substituted, this form of construction permitting of the extremely compact unit which is illustrated separately.



The Novel Driving Unit.

The armature shaft of the single electric motor is extended several inches and the worm is mounted directly upon it, a vertically divided housing, independent of that of the motor, serving to carry an outboard bearing to support the prolonged end of the driving shaft. This housing is bolted directly to the end of the motor, and the stub ends of the differential shafts project through it, as will be seen in the illustration. It will be apparent that this drive is not only the acme of simplicity, but it accomplishes the necessary drop in speed between the motor and the driving axles by means of a single reduction, a gear ratio of 10 to 1 being employed. In addition to this, it permits of the motor and its drive being made in the form of a single and practically self-contained unit, thus avoiding the necessity of employing the numerous other small parts essential to the customary form of drive.

The mounting of the combined power plant and drive is equally original, this unit being supported from the chassis frame, and being so placed that the differential stubs already referred to stand in approximate alignment with the centers of the rear wheel hubs. The differential is connected to the driving wheels through the medium of two shafts provided with universals, the design being such that these shafts lie in approximately the same plane when the car is carrying its normal load, the joints taking care of inequalities in the road. The axle is offset to allow for the clearance of the universal joints, and, except for this feature, is of the conventional floating design, the rear wheel hubs engaging driving dogs on the ends of the axle shafts.

The entire weight of both the car and its power-plant is thus carried on the springs instead of being "dead" on the rear axle, making the riding of the car much better and permitting of the use of solid rubber tires. The springs are unusually long, which, together with the fact that the entire load is carried by them, is said to make the car as comfortable as the ordinary type equipped with pneumatics. In order to equally distribute the weight, the complete battery is carried forward under a bonnet. It consists of 30 cells of 11 PV Exide, and by means of the arrangement mentioned the weight is so evenly distributed that the new Maxim-Goodridge electric car, with two passengers up, has only 35 pounds more weight on the rear axle than on the forward one. This has an important bearing on the ease of riding and is likewise a material factor in the tire problem.

Another original feature is to be found in the control, the handle being mounted on the steering post just below the steering lever, making it more convenient to operate, besides saving seat room as compared with the usual style, for which it is necessary to sacrifice part of the cushion. The motor is of General Electric make, and by means of a special type, uninterrupted torque, multiple-series controller, five speeds ahead and three reverse, are provided, the maximum forward speed being 18 miles per hour. Fifty miles is about the maximum on a single charge of the batteries, with either pneumatic or solid tires, on ordinary roads, with an increase over this figure on good city pavements. With the battery equipment already mentioned, the weight of the car is 2,100 pounds, being correspondingly less with a smaller battery and simpler type of body. The chassis is entirely self-contained and any type of body desired may be supplied, although the standard is the Victoria-phaeton shown in the illustration. Complete with this equipment the car lists at $1,800.

Showing Position of Power Plant.

Two sets of brakes

are provided, one set operating on the drums placed on the driving wheels and the other on the motor shaft, both being pedal operated. An unusually long wheelbase is provided for this type of car—namely, 84 inches—while the running gear consists of 32 by 3 1-2-inch artillery wheels, these two points in the design of the car adding greatly to its ease of riding.

High frictional losses and the fact that, as ordinarily designed, the worm and pinion comprise an irreversible driving set, have militated against its adoption in the past. The problem has been one largely of tooth angle and tooth area, and that is has been successfully solved is evident from the use of the worm on a number of gasoline cars for the past three years, notably heavy passenger 'buses in London. In the present instance, the designers claim to have greatly improved on anything thus far done in this line, and while the manner in which they have accomplished this is not to be made public, the extremely small frictional losses are evident from the fact that the car can be moved by the slightest effort, while tests of power consumption give positive proof of the low point to which the losses have been reduced. The worm is made of specially hardened steel, both the worm shaft and the motor armature shaft running on D. W. F. ball bearings, the whole unit being tightly housed.

MACHINING AUTOMOBILE CRANKSHAFT BRASSES

SOME time ago a correspondent showed a set of jigs and fixtures for machining automobile crankshaft and connecting-rod brasses. As we do very large quantities of these, I can speak with some authority on this subject, says R. Roton, in the *American Machinist*. Some tools make them in good time, but

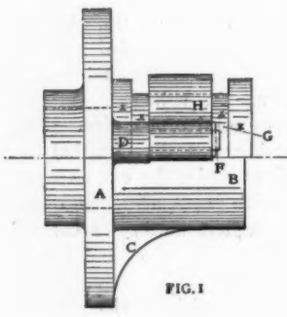


FIG. 1

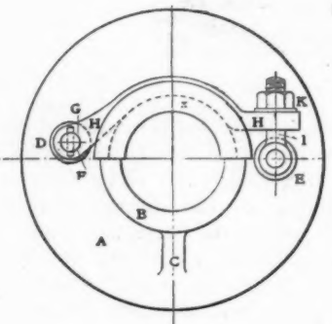


FIG. 2

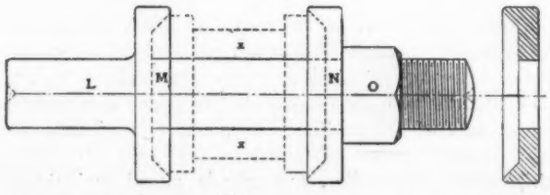


FIG. 3

FIG. 4

in the boring and turning of the brasses the two halves for making a complete bearing are not always equal. This is due to the method of setting the brasses for boring, the process being first to sweat the two halves together, then file a small groove across the joint, and locate it centrally by two pointed screws on the face plate for that purpose. When the brasses are taken apart for assembling, it is extremely annoying to find that they will not match or that they are not interchangeable.

This means trouble and also expense, so we designed the tackle shown, which gets over the difficulty, and has saved its cost many times over, as all the brasses bored and turned on it are absolutely interchangeable, the joint being dead central every time. *A* is a gray-iron face plate for the capstan lathe; *B* is a lug milled on the top edges as shown, across the center, on which the milled half bushes are laid. *C* is a rib for supporting *B*; *D* is a boss for carrying the screwed pin *F*. *E* is a similar boss to *D*, for supporting *J*, which carries the swinging eyebolt *I*. *G* is a small cotter pin passing through *F* to keep the swinging clamp *H* in position, which is tightened down by *K*, operating on *I* through a slot in the end of *H*. *X* shows the half brass bush in position for boring and turning the front collar on the fixture. After it is bored and the front collar faced and turned, it is turned round and a hardened, ground, locating mandrel fits in the hollow spindle, on to which the half bush is clamped, as before. The back is then turned and faced, the end fitting tight up against the machined face plate; the front end is turned and faced to length, the diameter of the two collars being exactly the same.

The bushes are then taken to the engine lathe and turned on the mandrel shown in Fig. 3, which is hardened and ground. *L* is the part where the driver is clamped on; *M* is a collar solid with the shaft, a section of which is shown at Fig. 4. *N* is a similar loose collar; *O* is the nut for securing the lot. *X* shows a dotted bush in position for turning. It will be seen that the recessed insides of the two collars *M* and *N* grip the collared ends of the bushes and close them on the mandrel, which should be a good fit on the body. The tighter the nut *O* is gripped, the more the bushes are closed on the mandrel, and thus held true in position for turning the body or middle part. Brasses done by this method save a lot of time in assembling, and the operation of sweating the two halves together is entirely obviated, which is a very desirable feature, as when the soft solder is in the joints it opens them 0.005 to 0.010 inch and has to be scraped out afterward by hand to get them to a true circle.

IN EXPLANATION OF CARBURETER BACK-FIRING

OF all the carbureter troubles that have mystified the novices of each succeeding season, probably there is none that has proved so utterly puzzling, as well as alarming, as that of popping or back-firing, says *The Motorist*. This mysterious saiment has a habit of appearing with an irregularity that is disconcerting, and which makes it appear as if it were not the outcome of any particular combination of circumstances, as would be the case were its presence only an accompaniment of certain visible and easily-detected symptoms. But it comes and goes unexpectedly, at times reaching proportions that are alarming, particularly when flames shoot out of the air inlet of the carbureter—an occurrence which gives the average driver visions of a conflagration and the smoking ruins of his car. It is difficult for him to understand why this fire should not ignite either the gasoline or the vapor itself that is in the carbureter at the time, and send the whole car up in flames. Simply because the former does not ignite readily, due to the fact that it is almost pure vapor with little or no air, and the flame passes over the latter at such a speed that it has not time to take fire. Even though the spray issuing from the jet should take fire, the flame could not travel back through the spray nozzle to the float chamber, and it would be extinguished by the next inrush of air immediately following.

RENTING AND COST ACCOUNTING CONSIDERED

By LORENZO B. BAKER.

TOTAL profit of all departments of a business cannot be greater than the sum total of the profit of each department. Hence, it is just as important to know the result in each department as to know the result as a whole, for an unsuspected loss in one department may be overcome and hidden by the profit in another. Any condition thus hidden is as dangerous to a business as a hidden bomb is to unpopular royalty. The dealer who has such spots in his business will in the last analysis always lose out to his competitor who has none.

Native shrewdness is not a match for just common every-day judgment, when the latter is based on facts regarding detail, which the former is apt to ignore. Manifest advantages of location, capital, and shrewdness cannot, in the long run, hold their own against analized facts well digested.

It is not my purpose to introduce a lot of figures to show the cost of operating cars, or to illustrate the possible profit or loss that may result. Let us first determine whether or not it is worth while to inquire into the matter and to so shape the accounting as to show it.

How many can tell whether or not they make a profit from the rental on cars? Of those who think they make a profit on rentals, how many can tell *how much* they make on this department of their business? Few, indeed, are those who can give a reasonably satisfactory answer to the latter question.

What reason is there for renting cars unless you are thereby able to make a profit that could not be made in any one or all of the other departments of the business?

When a department is here spoken of, it is not necessary to suppose that it implies a number of men and their foreman. Instead, it is the designation of an element in the analysis of business. If one man does all of the work, he may be considered the repair department at one time during the day, and the office force at another. Manifestly, it is not fair to penalize one department for the advantage of another; therefore, if the repair department makes repairs on a rental car, these repairs should be charged for at not less than cost. Of what, then, does this cost consist? Certainly of the value of materials and parts used, and of labor. But is this all? If the dealer was to charge other customers on this basis, he would soon go out of business, because the real cost consists not only of material and labor, but also of rent, depreciation, general expense, etc.

If, then, a method could be determined that would correctly apportion to the repair department, its share of all overhead expense, would the resulting charge to the rented auto for the cost of repair, consisting of material, labor and overhead, be the correct charge for the repair? We find at this point that there are two methods possible, and that either will give results, and the intimate knowledge that it has been contended is necessary.

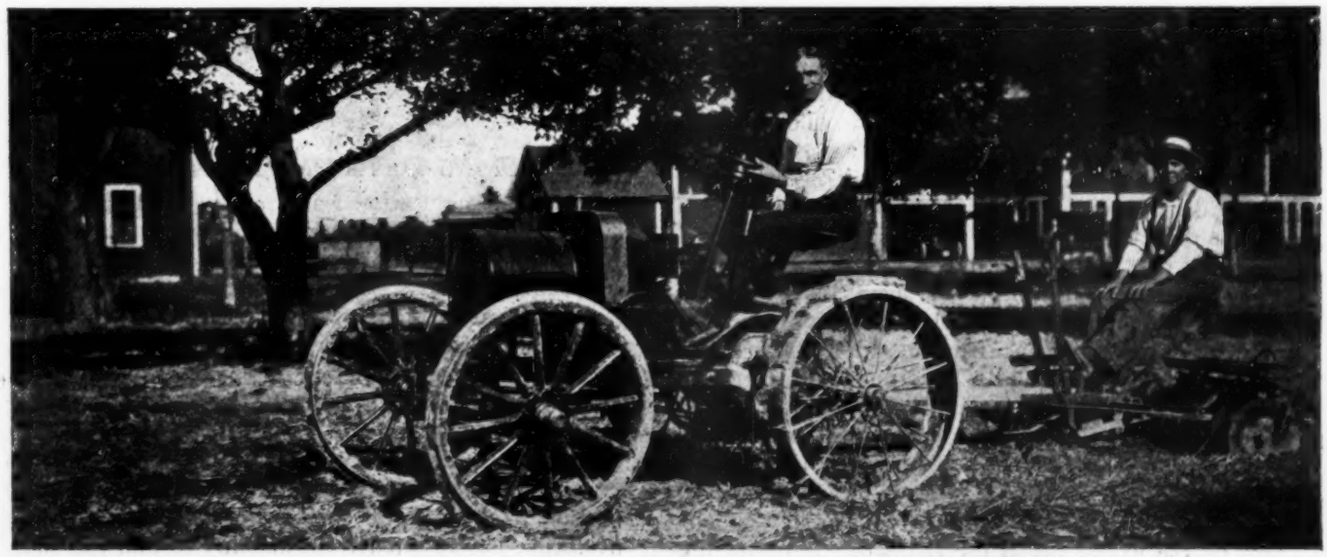
If costs were thus transferred from repair department to the rental department, there would not result any hidden losses, and the entire expenditure for repairs would be known. There is a reason, however, for saying that by stopping at this point in our costs, we have allowed the rental department to show a profit that, in part, belonged to the repair department.

Is not the repair department entitled to the same profit on its work for the rented car, as on work for outside parties? Is there any reason why a profit should not be made on cars rented above the amount that repairs would cost, if purchased outside?

The rental department may rightly be considered as a business by itself, and, when so considered, it is entitled to a profit on the rental element alone, presupposing that all accessories, gasoline, repairs, etc., are bought in the open market, and that on them there has been made a reasonable profit. Why should the auto renter cheat himself of one profit? He is entitled to two profits—one on repairs, supplies or accessories as a dealer, and the other as a renter of cars. He may consider himself as a liveryman, who buys his carriage horses, feed and repairs. A liveryman does not run either a wagon shop that he may repair his buggies, or a harness shop to repair his harness, or a farm to raise his feed, and he expects to make a profit after paying some one else a profit on these articles.

There are several other elements of importance that enter into the cost of the rental of cars that cannot be considered in detail here. Managers may ask if it would not be necessary to employ a high-priced bookkeeper to secure the kind of accounting here advocated.

We find in all departments of industry that results seemingly complicated are attained by simple means, because of the thought that has prepared a way that any person of average ability may easily follow. So it is as regards the accounting that is necessary to properly exhibit these costs. It does not involve more skill than is possessed by an average bookkeeper.



How Henry Ford Utilizes an Automobile Plow of His Own Design on His Farm Near Detroit.

Mr. Ford predicts that the next ten years will see automobiles in use doing work of so varied a kind that, even with all our knowledge and our preparedness to accept almost any advance, we dare not anticipate, and that one of the sure developments will be in the way of self-propelled farm implements.

THE AUTOMOBILE

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DEDUCTIONS FROM THE BRIARCLIFF RACE.

Among the features that characterized the running of the race for the Briarcliff trophy over a course that was concededly impossible, none stand out with more prominence than the remarkable uniformity with which such a very large proportion of the contestants continued to reel off lap after lap, and the positively marvelous manner in which tires endured strains of a severity far beyond what they had ever been called upon to meet in any road racing event up to the present. Figuring by precedent, and adding a generous percentage to allow for the vast difference in the nature of the course, as compared with that on which the Vanderbilt race has been run, it was confidently predicted that half of the contestants would see their chances ruined in the first lap. The succeeding lap or two were counted upon to be equally effective in eliminating probably as many more of those that remained, while it was scarcely thought possible that there would be more than a handful still running when the yellow flag should bring the race to its official end.

The actual results show how very far wrong were all these predictions. The dolorous head-shakings of the wise ones as to the frequency with which tires would have to be changed, and the numerous prophecies, based on experience, regarding the wide swath one or two laps of that course would cut in the ranks of the competing cars, all went for naught, as did equally the somber forecasts of those who thought that the services of the ambulance would be in great demand. The regularity with which the cars ran and the manner in which their tires stood the terrific strain, are matters that can be explained by the simple word improvement; but that none of the spectators were killed is one of those profound mysteries that only the quotation of such proverbs as "There is a special Providence that looks after, etc.," can serve to throw any light on. The nature of the country, however, forced people off the road and up the bank to gain points of vantage, and thousands were forced to places of safety.

Taken all in all, the Briarcliff trophy race was a successful event of its kind, but if stock touring car races are to form a permanent feature of automobile racing, as it seems very probable they will, they should not belie their name as this one did. Just what a stock car is will have to be defined much more closely. The maker who turns out a limited number of a specially fast type of car to order is justified in calling it a stock car, as it complies with the requirement that he shall have built not less than ten duplicates of it, but it places him in a vastly superior position to the entrant who lists a type of car designed for the needs of the many, and of which he is turning out hundreds, or thousands, annually. In a race where speed alone is the consideration, no fault can be found with whatever type of car is employed to attain that end, but where the principal object is to display the staying qualities, combined with speed, of the type of car that the average autoist wishes to own, it is surely a travesty to permit the palm to be carried off by representatives of a speed model, destined to be produced in very limited numbers. In last week's race, this applied quite as much to some of those that did not win, as to those that figured prominently in the honors.

All the entrants must be placed on an equality as far as possible, and to achieve this there must be a more effective means of defining exactly what a stock car is. It is all very well to limit its piston displacement, thus barring very high-powered cars, but the stock car, to fulfill the requirements of its title, must be the generally salable product of its maker, and not the special speed design turned out to meet the wants of a very few. That more than ten duplicates of the car entered should have been turned out would be necessary, and it would also be well to so alter the rules as to make the committee the arbiter of this point. Why should not the committee actually choose the car at the factory?

* * *

ENGINEERING DATA ON THE AUTOMOBILE.

Mechanical engineering was a pretty staid and settled science long before anyone thought it worth while to attempt to preserve data on its multitudinous features, but, then, progress was not over rapid a century or more ago. Despite the vast volume of valuable data that has been compiled in the last fifty years or so, there is a large part of it that is not applicable to automobile engineering. A great deal of matter well worthy of preservation, and of value to automobile builders, has been written in the past seven or eight years, and, as automobile engineering is a very new branch of the science that represents a radical departure from standards current in other lines, much inconvenience has resulted from inability to find this data. It is a matter for congratulation, therefore, that a well-known designer has undertaken the compilation of an automobile engineer's handbook.

NEW YORK'S BILL AT SPECIAL SESSION.

ALBANY, N. Y., April 26.—The Armstrong-Merritt automobile bill may be taken up at the special session of the Legislature, called by Governor Hughes for next month. It will be remembered that Senator Armstrong moved on the day before adjournment to recommit the measure to the committee, stating that it required essential though slight revision before final passage. In the bill as first introduced the annual registration fees ran from $3 to $13, these being the figures proposed by Oliver A. Quayle, president of the New York State Automobile Association. Subsequently A. R. Shattuck, a New York City automobilist, assuming to represent the A. C. A., was responsible for increasing the fees from $5 to about $40 for the highest powered cars. Later, at a final conference concerning the measure, W. W. Niles, attorney for the A. C. A., supported Senator Armstrong in insisting upon a jail penalty for a first offense, which proposition was opposed by President Quayle, of the State association, and President W. H. Hotchkiss, of the A. A. A. While it is true that all speed limits are eliminated, not a few automobilists are questioning whether the vastly increased fees and the jail clause are a commensurate exchange for the abolition of speed traps.

Governor Hughes Will Recommend that It Be Included.

ALBANY, N. Y., April 29.—Senator Jotham P. Allds had a conference with Governor Hughes yesterday afternoon and found the Governor favorably disposed to recommending to the extraordinary session of the Legislature the Armstrong-Merritt Motor Vehicle bill. The Governor was informed how the Senators and Assemblymen in charge of the bill—Armstrong, Allds and Merritt—were busy up to the last moment of the session, so that they had no time to perfect the bill in several particulars and get it amended in time to pass it even with the aid of an emergency message. The Governor appreciates, as do the legislators, that the State will lose for another year nearly half a million dollars if this proposed new scheme of registration or taxation of motor vehicles is not enacted into law.

VAN SICKLEN RESIGNS; GORHAM SUCCEEDS.

CHICAGO, April 27.—N. H. Van Sicklen, who has served as secretary of the Chicago Automobile Club since last fall, has resigned because of contemplated absence from the city. 'Tis said "Van" will try the quiet life of a farmer at St. Charles, Ill. To fill his unexpired term Sidney S. Gorham, who was secretary of the organization for four terms, has been selected by the board of managers. Mr. Van Sicklen's resignation was accepted with considerable regret, as he has long been an active favor in the affairs of the club. He has also resigned as chairman of the technical board of the American Automobile Association.

THEATRICAL TAXICABS FOR NEW YORK CITY.

Further details of the enterprise which will maintain a special theatre service of taxicabs are now forthcoming. The Front Drive Motor Car Company is the name of the concern which has been incorporated with a capital of $250,000. W. Gould Brokaw and Morris Gest, of the theatrical firm of Comstock & Gest, are the backers, and it is said that theatrical firms have already subscribed for stock. Walter Christie is the designer of the car, which will be of the front-drive type, the entire power plant and transmission being in self-contained unit form and readily detachable. A twelve-story building, now in course of construction, constitutes the main station.

LONG ISLAND STRAIGHTAWAY RACES, JUNE 5.

Under the auspices of the Long Island Automobile Club, arrangements are being perfected for the holding of straightaway races on Hillside avenue, just outside of Jamaica, L. I., the day and date being Friday, June 5, and the affair being a part of the celebration of the opening of the Long Island subways. A. R. Pardington is to be the general manager, and the course is to be police guarded. Hillside avenue will supply a model course.

THE 1908 VANDERBILT CUP COURSE?

Whether the Vanderbilt Cup course for 1908 will be located in Georgia or Connecticut yet remains to be definitely decided, with indications at present favoring Savannah. A definite announcement is expected in the near future. Harvey W. Granger and Secretary A. W. Solomon, of the Savannah Automobile Club, have been in the city this week, conferring with Chairman Jefferson deMont Thompson and other members of the A. A. A. Racing Board, who are also of the Cup Commission.

OSBORNE I. YELLOTT'S UNLUCKY REPAIRING.

BALTIMORE, April 27.—Osborne I. Yellott, counsel for the Automobile Club of Maryland, was burned about the face and hands while repairing his automobile. He was lying on his back under the machine when the vapor, from oil which dripped on Mr. Yellott's face and hands from a broken gasoline pipe, spread to a lamp which exploded. Farm hands smothered the flames with horse blankets. It may be necessary to call upon friends to furnish cuticle for grafting skin over the burns on Mr. Yellott's face and hands.

A. M. C. M. A. SHOW OPENS NEW YEAR'S EVE.

New Year's Eve, a great gala night in New York, has been finally chosen for the opening of the show of the American Motor Car Manufacturers' Association, at Grand Central Palace. It will continue for eight days, thus making the show dates December 31, 1908, to January 7, 1909.

In choosing the opening week of the year, the promoters believe the date chosen will prove an ideal one from the fact that during the first week of the year something like 150 big railroad and industrial corporations pay out from New York almost $200,000,000 in dividends on stocks, without reference to bonds, mortgages and other securities. Much of this money each year has gone into the purchase of automobiles.

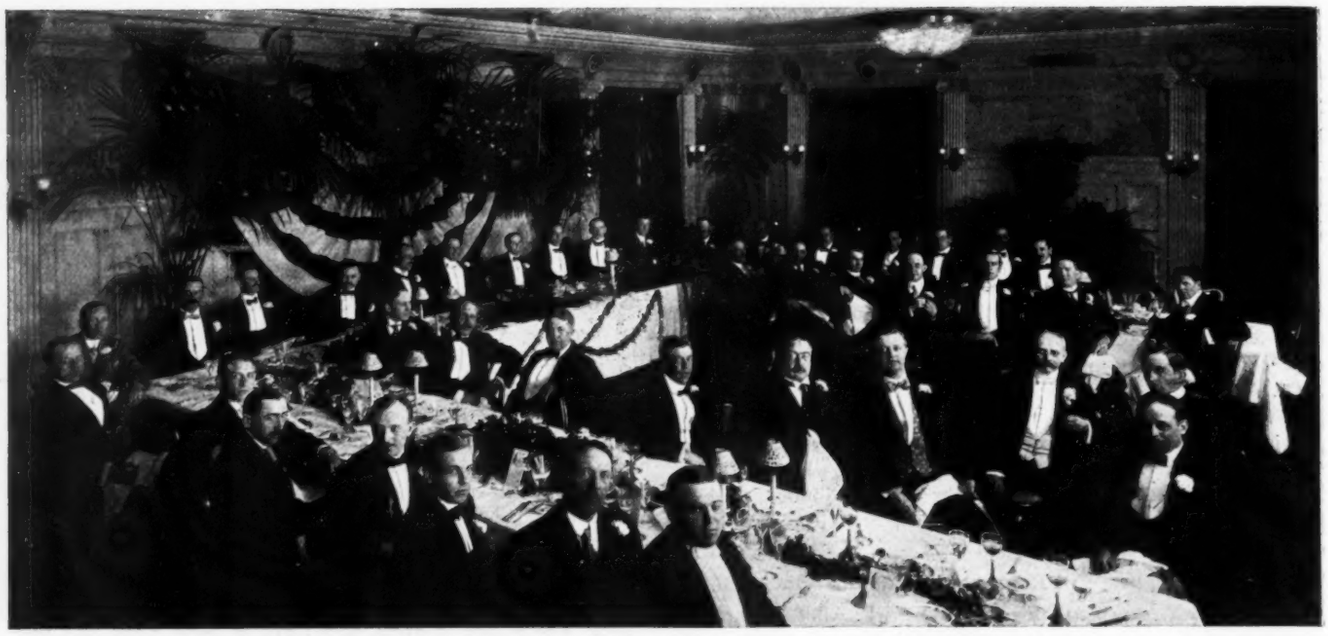
GLIDDEN PATHFINDERS START THIS WEEK.

BUFFALO, April 28.—Dai Lewis, secretary of the A. A. A. Touring Board, plans to start Friday morning to lay out the route for the annual national reliability test. He will be accompanied by an assistant and a photographer. Every mile of the road will be measured and notes and photographs for the guide book of the tour taken. The pathfinding trip will be made in a Premier, which, by the way, will also serve as a confetti car on the tour itself. The Premier, it will be remembered, was the only four-cylinder car selling under $3,500 competing for the Glidden trophy which evolved last year with a perfect score. Leon Myron Bradley, of the A. M. C. M. A. staff, will accompany Secretary Lewis as representative of the Premier Motor Car Company.

JUDGE GARY NAMES HIS COMMITTEEMEN.

Judge E. H. Gary, the new president of the Automobile Club of America, has announced his standing committees for the year so far as they have been determined upon by him. In many cases only the chairman has been named, the selection of their associates not yet having been completed. The most important committee of all is the executive committee, which will practically have charge of the affairs and the actual running of the club itself. Henry Sanderson, the first vice-president, is chairman of this committee, which also contains Dave H. Morris, Colgate Hoyt and Edgar L. Marston.

Chairmen of the most prominent committees are as follows: Good roads, A. R. Shattuck; entertainment, Orrel A. Parker; bureau of tours, Waldron Williams; contests, Robert Lee Morrell; racing, Samuel B. Stevens; technical, Dr. S. S. Wheeler; laws and ordinances, Phillip T. Dodge; city streets, W. W. Niles; foreign relations, John E. Bourne; public safety, George F. Chamberlin.



Around the Festive Board at the Hotel Astor Were Many Well-known Autoists In and Out of the Trade.

"WAG" GETS A BANQUET AND A STOP WATCH.

NEW YORK, April 27.—It is no exaggeration to say that "Wag" was given "the time of his life" at the Hotel Astor on Sunday night, when a few of his intimate friends to the number of forty-six gave him a banquet and a very useful souvenir of their affection. Though the affair was hastily gotten up, there was a ready response to the invitations, few hesitating either at Sabbath breaking or even leaving suburban homes on a Sunday night to participate in jollying along such a popular veteran of both bicycling and automobiling as this same Fred J. Wagner. In the gathering were men prominent in the sport and industry and not a few veterans of the old bicycle days gone by, all now, however, included in the automobile fold. Those who could not be present sent letters, and there were telegrams, too, from distant points.

E. E. Schwarzkopf, "Wag's" proverbial pinochle partner, starting the game of jolly that was played with humor and sincerity the whole evening, and concluded by the presentation of a gold stop watch. "Wag" proved he had sentiment and not a little poetry in his composition by his "come back." Robert Lee Morrell was then installed as toastmaster, and he saw to it that as many of the post-prandial orators as possible within the midnight limit got a chance to get rid of what was on their minds. All had stories to tell of "Wag," and all handed it to him good and plenty. Some even sprung poetry on the old man, and R. H. Johnston went so far as to immortalize him in a song with a chorus that all quickly learned and sang with a will.

Among those who got rid of the jollies and the reminiscences that were on their minds before the lid was put on were: A. R. Pardington, Charles Jerome Edwards, George W. Bennett, Benjamin Briscoe, E. R. Hollander, Alfred Reeves, E. S. Partridge, Henry Caldwell, Guy Vaughan, Joseph W. Gilbert, R. A. Field, A. G. Batchelder, John C. Wetmore, Thomas Francis Moore, R. B. Johnston and Nathan Lazarnick. Others of "Wag's" friends present were: Arthur N. Jervis, H. T. Clinton, Thomas Wetzel, J. S. Draper, L. D. Rockwell, W. J. Morgan, A. J. Picard, S. W. Merrihew, A. L. Kull, A. B. Tucker, W. W. Burke, Cortlandt Cramp, Duncan Curry, Harry Fosdick, C. F. Wyckoff, A. W. Church, Frank Crane, A. L. McMurtry, Alexander Dow and John Williams. Telegrams were read from W. E. Metzger, Louis R. Smith, E. LeRoy Pelletier and others.

The college room of the Hotel Astor was most artistically decorated, flags and flowers being utilized generously in making the cozy banquet room decidedly inviting. It was well after midnight before the festivities concluded.

CONNECTICUT ACQUIRES BASIC COIL PATENT.

By the purchase of United States patent No. 884,116, issued to E. Q. Williams, of Syracuse, N. Y., on April 7 last, the Connecticut Telephone and Electric Company, Meriden, Conn., has acquired exclusive rights to the manufacture and sale of the multiple unit type of induction coil now universally used on automobiles. Mr. Williams was the unquestioned originator of the removable unit multiple coil, as shown by the fact that his application for a patent dates back to December 28, 1904, the delay in finally issuing a patent being due to the fact that it was involved in an interference with the claims of Richard Varley on the same form of construction. A final judgment of priority of invention having been granted to Mr. Williams, together with the very early filing date of his application, gives his patent precedence over all others filed and issued subsequently to 1904.

The patent in question contains no less than 57 separate claims, fully covering the now general removable unit construction, single and duplex battery switches on the coil containing case, and similar features. After carefully investigating Mr. Williams' claims and thoroughly establishing his priority in the art, the Connecticut company immediately acquired the patent and all rights thereunder. The Connecticut coils will be made under this patent, in addition to retaining the numerous features which have distinguished them in the past, while Mr. Williams will continue to manufacture the coils as previously, under an agreement with the new owners of the patent. The Connecticut company holds numerous patents, both issued and pending, on the special features of its coils, and will undertake a vigorous campaign against infringers. The outcome of this new development of the patent situation will be looked forward to with interest, basic patents having cropped up, from time to time, on the majority of the principal features of automobile construction and accessories.

HEAVY REGISTRATION IN PENNSYLVANIA.

PHILADELPHIA, April 27.—Figures recently issued by the Highway Department of Pennsylvania show that during the months of January, February and March there were issued by the authorities at Harrisburg no less than 14,500 licenses to operate motor vehicles in the State. These, at $3 each, will provide much more than the amount necessary to run the department, and with three-fourths of the year yet to hear from, it is reasonable to presume that the total registrations will easily pass the 20,000 mark. Last year's total was about 1,500 short of that figure.

ACTIVITIES IN AUTO CLUBDOM'S REALM

BURLINGTON CLUB TAKES NEW LEASE OF LIFE.

BURLINGTON, VT., April 27.—Last Tuesday evening, the Burlington Automobile Club held one of the most enthusiastic meetings in its history. A large number of new members were admitted, and W. A. Suydam was elected as corresponding secretary. Three new standing committees were appointed, as follows: Legislation, A. C. Whiting, A. G. Whittemore, J. S. Patrick; good roads, Capt. E. P. Woodbury, B. L. Kent, F. L. North; by-laws, W. A. Suydam, C. L. Woodbury, G. A. Churchill. President Hawley spoke strongly in favor of better roads and regulations to govern same, and in favor of enforcing the law to require selectmen to provide sign boards at all turns and cross-roads in the townships. The proposition of holding a parade and banquet on Decoration Day was left to the executive officers of the club to decide upon. The club will tender the use of the members' autos to disabled war veterans on that day, to convey them to the grave decorating ceremonies at the cemeteries.

FULLER RE-ELECTED PRESIDENT NUTMEGGERS.

NEW HAVEN, CONN., April 27.—At the annual meeting of the Connecticut Automobile Association, held in this city last Wednesday evening, W. F. Fuller, president of the Automobile Club of Hartford, was re-elected president, and Secretary G. K. Dustin was again chosen as secretary. Dr. Hertzber, of Stamford, was chosen as treasurer. The Willimantic Automobile Club, recently organized, was admitted to membership.

Plans were formulated for greatly extending the usefulness of the State association, and Secretary Dustin was authorized to pay official visits to towns in the State where the automobile interests warrant the formation of local clubs, with the view of rendering all the assistance possible. The next meeting of the State association will be held at Bridgeport, May 30.

GRAND RAPIDS CLUB ELECTS NEW OFFICERS.

GRAND RAPIDS, MICH., April 27.—The Grand Rapids Auto Club has held its election of officers, which resulted as follows: D. Emmett Welsh, formerly treasurer, and also secretary of the State association, was elected president, and J. R. Jackson, member of the touring board, A. A. A., and treasurer of the State association, was elected vice-president. Dr. William Burleson was made secretary, and Lewis C. Parmenter, treasurer; board of governors, A. A. Barber, George W. Hart, and W. D. Vandecar.

There is a possibility that the club will abandon its Cascade clubhouse, about eight miles southeast of the city, and decide on a clubhouse north of the city, on Grand river, near Plainfield.

ENTRY BLANKS FOR SPORT HILL CLIMB READY.

BRIDGEPORT, CONN., April 27.—With the advent of "good going," the Automobile Club of Bridgeport is exhibiting an enthusiastic activity. Entry blanks have been issued for the annual hill-climb at Sport Hill on Memorial Day, May 30, and the lists are filling up rapidly for that event. Nine classes for cars ranging in price from $850 to $4,000 and over, and including a free-for-all, and the Cranfurd Cup for amateur drivers is on the program. It is expected the course will be patrolled by the Fourth Company, Coast Artillery, Connecticut National Guard, in command of Capt. George E. Hawes.

At the recent annual meeting of the club, the following officers were named for the ensuing year: President, Frank T. Staples; vice-president, F. A. Strong; secretary, F. W. Bolande; treasurer, L. B. Powe. Silas Burton, Ralph M. Sperry, and A. K. L. Watson were named as governors. Under an amendment to the constitution, the board of governors was increased by six members. The following were elected: De Ver H. Warner, Charles B. Read, Dr. H. S. Miles, J. B. Lyford, F. A. Rantz, and J. T. Fray.

State Highway Commissioner James H. Macdonald addressed the meeting in an interesting talk on the subject of State roads, and the relation of the automobile to the maintenance of good roads. Mr. Macdonald was elected an honorary member of the club. The club is about to adopt new colors. A committee is now at work deciding upon a simple and effective banner, which will be introduced this season.

TEST RUN AT WILMINGTON, DEL., MAY 17.

WILMINGTON, DEL., April 23.—Wilmington will have its first actual automobile run on May 17, when there will be an ability run under the auspices of the Delaware Automobile Association. It will be over a 45-mile course, which will include Avondale, Kennett Square and Westchester, Pa. The cars will run under sealed orders, so that each will not know what handicap has been allowed, the object being to give all cars, regardless of power, an equal chance. The association has placed the entrance fee of its members at $2 each, and for non-members at $5. Valuable prizes will be given to the winners.

INDIANA CLUB TO HAVE ROAD RACE.

INDIANAPOLIS, IND., April 27.—The Indiana Automobile Club, the strongest organization of its kind in the State, is preparing a program of road races for July 4. While the club is opposed to track racing, it believes that a good program of road races would be interesting. The course contemplated is only four miles long, starting at the Thirtieth street entrance of Riverside Park, thence west up the hill at the west side of the park to the

Referee R. H. Johnston, of White Steamer Pathfinder Fame, and His Associate Harrisburg Run Path-Layers.

first roadway running south, from where there will be a straight run to Emrichsville, returning over the Riverside Boulevard. About half of the course is in view of the park, and it is proposed to erect a grandstand, the proceeds from which would likely pay the expenses of the races.

Drivers of note from all parts of the country are expected to enter, and C. G. Fisher has offered to donate a $500 cup. It is proposed to begin racing at 5 o'clock in the morning, and to employ 150 special policemen to keep the course clear.

WILLIAMSPORT HILL CLIMB TO BE HELD JUNE 6.

WILLIAMSPORT, PA., April 27.—Sanction for the second annual hill-climb of the Williamsport Automobile Club has been obtained from the A. A. A. racing board, and June 6 is officially announced as the date. There will be fourteen classes on the program, for which silver cups will be awarded, and the car making the fastest time of the day will be awarded a special cup valued at $100.

The course is exactly one mile long, and the grade rises from 14 per cent. at the start to 11 1-2 per cent. at the finish. The rise is 407 feet, and the road is of boulevard construction. By reason of the smoothness of the road and the fact of the few curves in it, there is every expectation that the world's record for a mile hill-climb may be broken. There were twenty-one cars in last year's race, and it is expected that the number will be largely increased this year.

SPRING AWAKENS RUBBER CITY AUTOISTS.

AKRON, O., April 27.—These sunny spring days have warmed the members of the Akron Automobile Club into life and a resolve to reorganize the club, which of late has rather drifted into inocuous disquietude. A meeting for this purpose is soon to be called. A year ago there were less than 300 owners in this city, but now there are over 400, and the necessity of an active club is felt. The first run of the Cleveland Automobile Club will be to the lakes, south of Akron, and will bring a big crowd of Cleveland autoists and machines.

TROJANS FORM AN AUTOMOBILE CLUB.

TROY, N. Y., April 27.—The Automobile Club of Troy has effected a preliminary organization and chosen the following officers: President, Frank B. Twining; vice-president, E. S. Platt; secretary and treasurer, Alonzo McConihe. They and the following will make up the board of directors: G. A. Cluett, LeGrand C. Cramer, H. S. Ide, John McGlynn, J. J. Murphy, R. C. Reynolds, John Squires and Dr. L. R. Whitney.

AUTOMOBILE CLUB ORGANIZED AT MARIETTA, O.

MARIETTA, O., April 27.—At a meeting of automobilists of this city and vicinity, held last week, the Marietta Automobile Club was organized with the following officers: President, H. B. Coen; secretary, Joseph Baxter. There are some seventy owners of automobiles in Marietta, and it is hoped to interest all of these in the new organizations.

CLEVELAND CLUB WILL HAVE BUSY SEASON.

CLEVELAND, April 27.—The officers of the Cleveland Automobile Club are preparing for an active summer's work and are planning numerous club runs in addition to the hill climb and many minor events. The runs and tours committee of the club has drafted an excellent schedule for the season.

GLIDE CLUB PLANS RUNS FOR PEORIANS.

PEORIA, ILL., April 27.—The runs and tours committee of the Glide Automobile Club has arranged for a series of runs and has issued a schedule therefor, starting on May 1 and ending on September 26, some of them of two or three days' duration, embracing Sundays.

THE AUTOMOBILE CALENDAR.

AMERICAN.

Shows and Meetings.

June 25-27.....—Detroit, Third Annual Summer Meeting of Society of Automobile Engineers.

January, 1909..—New York City, Madison Square Garden, Ninth Annual National Show of the Association of Licensed Automobile Manufacturers. (Exact date to be announced.)

February, 1909..—Chicago, Coliseum and First Regiment Armory, Eighth Annual National Exhibition, National Association of Automobile Manufacturers. (Exact date to be announced.)

Race Meets, Hill Climbs, Etc.

May 4-5.....—Harrisburg-Philadelphia and Return, 300-mile Endurance Run, Motor Club of Harrisburg.

May 15.....—Chicago, Algonquin Hill Climb, Chicago Motor Club.

May 16.....—Hartford, Conn., 200-mile Endurance Run, Automobile Club of Hartford.

May 30.....—Bridgeport, Conn., Sport Hill Climb, Bridgeport Automobile Club.

May 30.....—Wilkes-Barre, Pa., Giant's Despair Hill Climb, Automobile Club of Wilkes-Barre.

May 30.....—San Francisco, Endurance Run under the auspices of the Automobile Dealers' Association.

June 6.....—Worcester, Mass., Dead Horse Hill Climb, Worcester Automobile Club.

June 24-27.....—Chicago, 1,200-mile Reliability Run, Chicago Motor Club.

July 7-8.....—Buffalo, N. Y., National Convention of the American Automobile Association.

July 9.....—Buffalo, N. Y., Start of the Fifth Annual A. A. A. Reliability Touring Contest.

Sept. 5-9.....—San Francisco-Los Angeles Reliability Run, under the auspices of the Automobile Dealers' Association of San Francisco.

Sept. 14.....—Chicago, Annual Economy Run, Chicago Motor Club.

FOREIGN.

Shows.

May 17-31.....—Austria, Budapest Automobile Show.

May 17-June 2..—Moscow, Russia, International Automobile Exposition, Automobile Club of Moscow.

December.....—Paris, Eleventh Annual Salon de l'Automobile, Grand Palais, Automobile Club of France.

Race Meets, Hill Climbs, Etc.

Apr. 25-May 25.—Industrial Vehicle Competition, Automobile Club of France.

May.....—Paris, Competition for Agricultural Automobiles, auspices of "L'Auto." (Date to be announced.)

May 7.....—Sicily, Palermo, Targa Florio Circuit, Voiturette Race, Automobile Club of Italy.

May 11-16.....—Ireland, Irish Reliability Trials.

May 1-31.....—Automobile Taxicab Competition, France, Automobile Club of France.

May 10.....—Sicily, Targa Florio, Automobile Club of Italy.

May 31.....—Russia, St. Petersburg to Moscow Race.

June 1-18.....—Reliability Trials for Pleasure Cars, Automobile Club of Great Britain.

June 14.....—Mount Cenis Hill Climb, for Voiturettes.

June 9-17.....—Touring Competition for the Prince Henry of Prussia Prize, Germany, Imperial Automobile Club.

June 15-19.....—Scotland, Scottish Reliability Trials.

July 6.....—Voiturette Grand Prix, Dieppe Circuit (Automobile Club of France).

July 7.....—Grand Prix of Automobile Club of France, Dieppe Circuit.

July 13-17.....—Ostend, Belgium, International Race Week, Automobile Club of Ostend.

July 20-30.....—Ardennes Circuit Races and Coupe de Liederkerke, Automobile Club of Belgium.

Aug.....—France, Coupe de la Presse, Automobile Club of France. (Exact date to be announced.)

Aug. 29-30.....—France, Mont Ventoux Hill Climb, Vaucluse Automobile Club.

Sept. 1-8.....—French Voiturette Contest, auspices of "L'Auto."

Sept. 6.....—Bologne, Italy, Florio Cup Race, Automobile Club of Bologne.

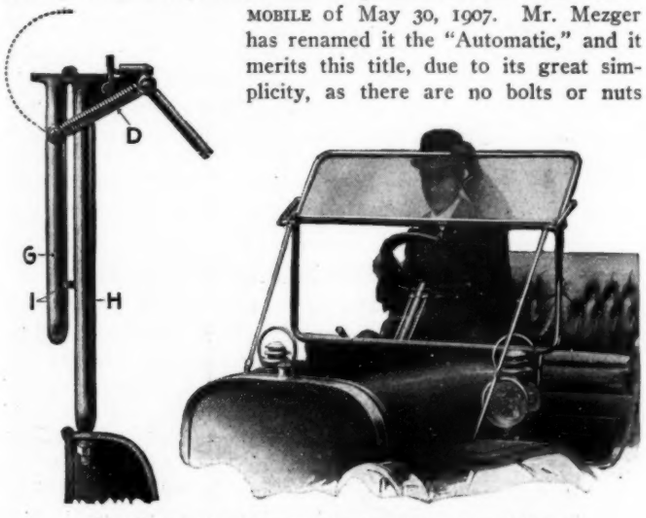
Oct. 11.....—Berlin, Germany, Gordon Bennett Balloon Race, Aeronautical Club of Berlin.

ANTHONY-HATCHER COMPANY ORGANIZED.

GRAND RAPIDS, MICH., April 28.—A stock company, to be known as the Anthony-Hatcher Company, has just been formed in this city for the manufacture of automobiles, trucks, and parts. The automobile portion of the enterprise with which the company is now concerned is the exploitation of the Soule automobile delivery wagon, formerly located in this city, but which was removed to Kalamazoo some two years ago. It is stated that the business with this product has grown gradually but surely, and that the new company intends to forward its interests, again removing to this city and manufacturing. The company is capitalized at $20,000. George E. Anthony and William A. Hatcher, who were engaged in winding up the affairs of the automobile department of the Harrison Wagon Works, are the principal stockholders.

MEZGER GOES IN FOR WIND SHIELDS.

Having made no little success in the manufacture of spark plugs and other ignition accessories, C. A. Mezger, Inc., 1759 Broadway, New York, has gone into the manufacture of windshields, having acquired the rights to the Conover automatic folding windshield, which was fully described in THE AUTOMOBILE of May 30, 1907. Mr. Mezger has renamed it the "Automatic," and it merits this title, due to its great simplicity, as there are no bolts or nuts



Details of the Mezger "Automatic" Windshield.

to be adjusted and it can readily be operated by the driver with one hand. The frame and fittings are entirely of brass and the latter are so constructed that it is entirely rattle-proof. The design and details of construction are fully covered by American and foreign patents. The National Sales Corporation, 296 Broadway, New York, are factory sales managers.

THINGS DOING AMONG THE GARAGES.

New York City.—A new garage is to be erected for the New York Taxicab Company, on Fifty-seventh street, between Eleventh and Twelfth avenues. It will be a four-story building of brick and concrete construction, and will contain the business office, repair shop, garage and storehouse of the company. It will be most completely equipped, and according to Harry N. Allen, president of the company, it will be ready for occupancy by September 1 next.

Detroit.—The new garage of the Westminster Auto Company, at 71-75 Mott avenue, has been completed and is now open. The company is backed by the same concern as the Broadway Auto Company, 36-40 John R street. C. S. Ross is in charge of the new establishment.

Newark, N. J.—Contracts have been placed for the construction of a two-story brick garage and dwelling at 401 Clinton avenue. The building is to be erected for William Bowdin and the first floor will be used for garage purposes.

The New Winton "Six-Teen-Six" at the Capital.

First and Second Secretaries of the Mexican Embassy at Washington, in a Winton "Six-Teen-Six," before the building housing the State, War and Navy Departments, and situated next to the White House.

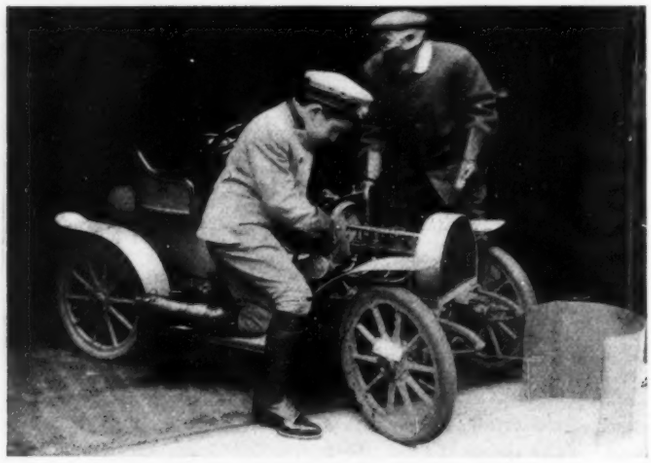
"MUDLARK" LOCATES IN OHIO'S TIRETOWN.

AKRON, O., April 27.—Fred Work, who has made a number of memorable transcontinental and Southern trips, is having an Oldsmobile of special make manufactured. He has been at the factory of the company looking after the designs of the body in accordance with some of his special ideas. The "Mudlark," in which Fred Work, A. Auble and Ralph Owen made a trip from New York to Florida two years ago and in which Owen repeated the trip over another route last Winter, has been purchased by the Akron Automobile Garage Company, and will be located here permanently for advertising and demonstrating purposes.

STODDARD-DAYTON PLANT AGAIN COMPLETE.

DAYTON, O., April 27.—Before the smoke of the recent fire which visited the plant of the Dayton Motor Car Company, the work of rebuilding was begun, and the occasion of the completion of the large new concrete building was fittingly commemorated last week by the presentation of a handsome American flag and flag staff to the company by its employees, as a token of the confidence of the working staff in its employers. George Harrison, who acted as executive officer of the special flag committee, made the presentation speech, while J. W. Stoddard, president of the company, received the gift and made plain his great appreciation of the testimonial of the good wishes of his men. The new concrete building, six stories in height, is shown at the right of the photograph.

Flag Presentation at the New Stoddard-Dayton Building.



The Lurie Boys' Auto That Is Interesting New Yorkers.

A LILLIPUTIAN AIR-COOLED AUTO.

What is probably the smallest gasoline-driven automobile ever built has just been delivered to George and Herbert Lurie, aged 13 and 11 years old respectively, and it is expected that it will soon be seen on New York City streets. It was specially built by A. Halverson to the order of John Lurie, the father of the boys, and when not in use will be exhibited at the salesrooms of the Auto Supply Company, 1733-1737 Broadway. Great pains have been taken to make it as exact a reproduction as possible of the large sized cars in everyday use, so that it is practically a reproduction on a small scale of a high-grade touring car.

Its power plant consists of a four-cylinder, air-cooled, F. N. motor, of which numbers are in use on motorcycles. Its dimensions are 2 inches bore by 2 1-4 inches stroke, and it is equipped with a Bosch high-tension magneto for ignition as well as an up-to-date system of lubrication. Its other specifications likewise conform to those of current practice, such as the pressed-steel frame, artillery wheels, sliding change speed gear, I-beam forward axle, semi-elliptic springs and the like. The tires are Hartfords on Midgley rims and measure 18 by 1 3-4 inches. The wheelbase is 46 inches and the tread 26 inches, while the gasoline tank has a capacity of two gallons of fuel. The car weighs 223 pounds all on, and is said to be capable of 40 miles an hour, though its wheelbase would make this a dangerous speed.

FRANKLIN GREATLY ENLARGES TRUCK DEPT.

Syracuse, N. Y., April 27.—In a quiet way, the H. H. Franklin Manufacturing Company has been studying the commercial vehicle problem from a practical standpoint, and as the result of its experiments and inquiries has now undertaken the manufacture of commercial vehicles of the gasoline-driven type on a large scale. "The development of the motor truck and motor vehicle has been slow," said H. H. Franklin, in an interview. "The vehicles have lacked stability and have not been as economical as horses. From the start we have kept a careful record of all operating, repair and maintenance expenses, and now have commercial vehicles more economical than horses. We expect that our commercial car department will give employment to 1,500 additional men inside of three years."

The line of commercial cars that the Franklin company will place on the market for the season of 1909 will comprise a light delivery wagon of 1,000 pounds capacity, suitable for dry goods, grocery and other forms of light work, a 3,000-pound truck for ordinary usage, and a 4,000-pound truck for slightly heavier work. Various forms of bodies will be put on these chassis, so that the line will include hotel 'buses, ambulances, patrol wagons, and the like. Taxicabs will also be included and the company is now said to be working on an order for these cars for one of the leading New York companies.

A. S. M. E. AND S. A. E. TO MEET AT DETROIT.

The third annual summer meeting of the Society of Automobile Engineers will be held in connection with the semi-annual meeting of the American Society of Mechanical Engineers at Detroit, Mich., June 25-27. The meeting of the latter will open June 23 and end June 26, the dates of the two gatherings overlapping in order that the members of both organizations may have the benefit of papers to be read at each.

The meeting of the automobile engineers will begin Thursday morning, June 25, by attendance at one of the morning sessions of the A. S. M. E., during which a paper on "Clutches, With Special Reference to Automobile Clutches," by Henry Souther, will be read, Mr. Souther being a member of both societies. Some of the other papers prepared by members of the American Society of Mechanical Engineers for reading at the meeting in question, are: "A Method of Checking Conical Pistons for Stress," by Prof. George H. Shepard; "Horsepower, Friction Losses, and Efficiencies of Gas and Oil Engines," by Prof. L. S. Marks; "Some Pitot Tube Studies," by Prof. W. D. Gregory, and "A Journal Friction Measuring Machine," by Henry Hess.

The papers to be read during the sessions of the Society of Automobile Engineers will include studies of oxy-acetylene welding processes, as used in automobile construction, which will be supplemented by an actual demonstration of some of the methods employed; efficiencies of different forms of gearing; storage battery practice; the single motor drive as applied to electric vehicles, and a number of other subjects, the complete program being made public later. Through the courtesy of the A. S. M. E., the members will obtain the benefits of reduced railway rates. The Detroit entertainment committee consists of H. E. Coffin, Henry Ford, Russell Huff, James Herron and Alonzo P. Brush.

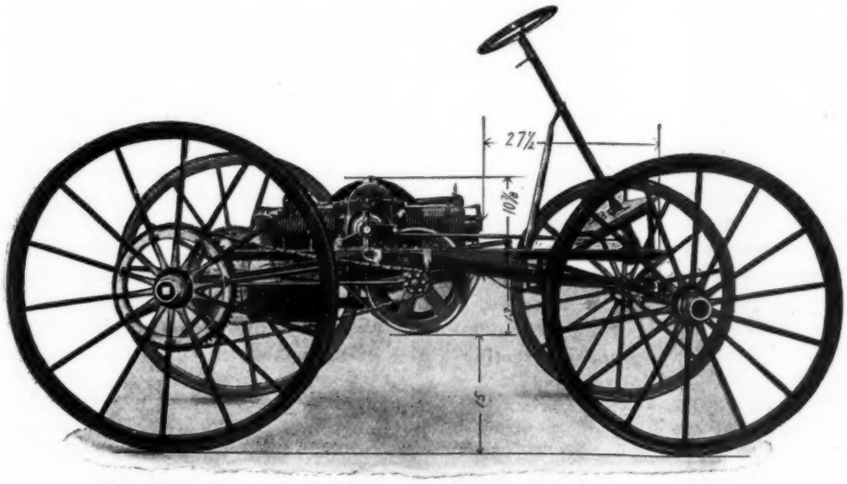
HOW AN AUTO REPLACED LOCO.

Pecos, Tex., April 22.—During the recent floods in Texas, the automobile played a prominent part. The Santa Fe railroad lost several bridges, and was left without an engine at Pecos, whereupon W. W. Pitts, of the Pecos Automobile Company, communicated with the general manager of the railroad and offered his aid. Mr. Pitts went to work on a four-cylinder double-chain drive Acme, and converted it into a railroad motor car. He secured push-car wheels and axles, and, by babbitting each end of a two-inch pipe and properly bolting it to the car in place of the regular axles, he turned the trick. He fitted 18-tooth sprockets, by using two pieces of well casing, 6 inches in diameter and 10 inches long. He bolted the sprockets to each rear wheel with six bolts through holes in the sprockets and holes drilled through the wheels. This made a rig that was a temporary railroad car carrying five and six passengers, while the Santa Fe was making temporary repairs. The Acme averaged 25 miles an hour, and at times reached 40. It was fitted with a Rushmore headlight, so it could run at night as well as day.

How an Acme Did Yeoman Railway Passenger Service.

THE REEVES AIR-COOLED BUGGY CHASSIS.

To meet the widespread demand that has arisen on the part of carriage makers and others, for the purely mechanical parts of the popular buggy type of vehicle—that is, the engine, change-speed gear, and transmission—the Reeves Pulley Company, Columbus, Ind., has found it expedient to place on the market a complete chassis of this type, instead of confining its attention to the manufacture of the motors alone, as has hitherto been the case. The power plant consists of one of the Reeves, Model



Side Elevation of the Reeves Complete Air-cooled Buggy Chassis.

N, 10-horsepower, two-cylinder, horizontal-opposed motors, which is used exclusively in this chassis. The cylinders measure 4 by 4 inches, the crankshaft being of hammered steel, turned and ground, and supported on long bearings. Gray iron is used for the crankcase, which has been so designed as to make all the parts of the motor accessible. Die-cast interchangeable bearings, hand-scraped to a true running surface, are employed, while the connecting-rods are of manganese bronze made adjustable on the connecting-rod end.

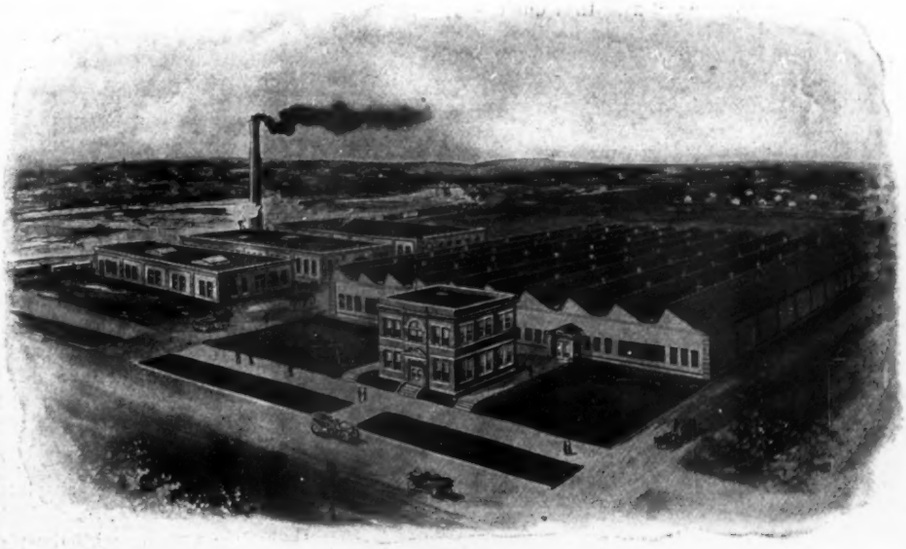
The distinctive feature of the Reeves chassis is its friction transmission, which is of an exclusive type, though the principle is an old one long utilized in the transmission of power in shops. A set of paper friction pulleys of different sizes is mounted on each end of the engine crankshaft, the smaller one of each set being mounted on a spline so that it may be telescoped into the larger by means of a pedal. Just forward of and below the engine is mounted a countershaft carrying two sets of aluminum friction pulleys. Each end carries a set and acts independently of the other. This countershaft, which is supported on roller bearings, carries the driving sprockets at its outer ends, and is hung in oscillating brackets, so that the aluminum pulleys may be rocked into contact with the engine friction pulleys by means of a hand lever. Two speeds forward are provided, the reverse being obtained by means of two idlers, adapted to be interposed between the pulleys on the engine shaft and the countershaft. From the sprockets carried on the ends of this countershaft, the final drive to the rear wheels is by means of double side chains, as shown. A wheel steer is employed, and the chassis, in other respects, approaches current engineering practice on larger and far more expensive cars.

NEW FACTORY OF WARNER INSTRUMENT CO.

Some idea of the manner in which the demand for speed indicating instruments in general has increased during the past few years, and the Warner Auto-Meter in particular, may be gained from the following description of the new plant which the makers of these instruments—the Warner Instrument Company, Beloit, Wis.—have just completed and are now housed in. This company also makes other small indicating instruments of precision, such as anemometers, tachometers, railway autometers, and the like, and as the demand for these is said to have increased in the same proportion, it is probably not strange that no pains have been spared to make the home of the Warner products one of the most complete and thoroughly equipped industrial establishments west of Chicago.

The buildings were designed and erected by the Trussed Concrete Steel Company, of Detroit, Mich., and are constructed according to the Kahn system of reinforced concrete. The main shop measures 100 by 200 feet and has a saw-tooth roof with ten projections, the vertical sides of which are glazed with prism glass, thus leaving nothing to be desired in the way of lighting. Side windows have also been provided at the benches where the jewelers work, but they have been found unnecessary. The walls and ceiling—in fact, all parts of the interior—are finished in white, including the shafting and pulleys, in order to reflect every possible ray of light. This vast expanse of white wall will be maintained clean by making the factory dustless, as the windows will be kept closed and ventilation effected entirely by means of a blast system, in which every particle of air entering the building is "washed" by being passed through a fine spray of water, the air being warmed or cooled as necessary.

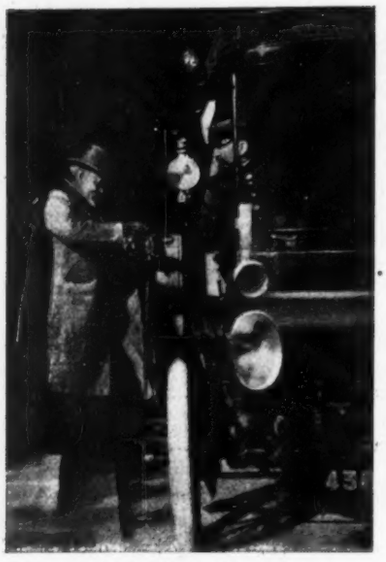
Not the least interesting part of the new plant is the system of shafting employed to drive the machinery. The supports are mounted on channel iron beams fastened to special cast-iron brackets, which were set in proper position in the concrete during the construction of the building. The point of greatest interest about this shafting is that it is all mounted on D. W. F. annular ball-bearings, the efficiency of which in this rôle may be imagined from the fact that one line of shafting 100 feet long and weighing 700 pounds may be turned easily with thumb and finger applied to shaft itself.



View of the New Plant of the Warner Instrument Company, Beloit, Wis.

ENGLISH ROYAL PATENT FOR MICHELIN TIRES.

King Edward VII. of England has just granted the royal patent to the Michelin Tire Company, making that concern official purveyors of tires to the throne, and, incidentally, to the cars in the royal garage. This is a much coveted privilege, as it almost invariably results in the adoption of the article so favored by all the members of the court, the nobility, the near-nobility or aristocracy, and so percolates down the various social strata until its use has become universal among every class whose pocketbooks will stand the strain. In this instance, however, the King and his court have been using Michelin tires extensively for years, and the royal patent is of service merely as an added mark of distinction, and a recognition of services so well performed that the bestowal of the honor was a matter of course.



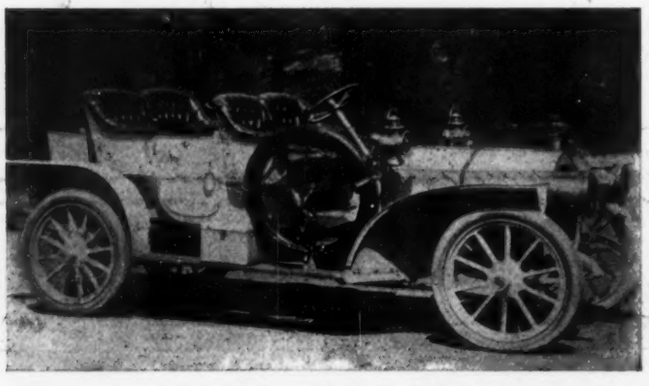
King Edward Entering His Car, Equipped with Michelins.

WINTON DECLARES POLICY FOR NEXT YEAR.

CLEVELAND, April 27.—Alexander Winton, president of the Winton Motor Carriage Company, has just made public a statement to the effect that this company will continue to devote itself exclusively to the manufacture of six-cylinder cars during 1909. This is the first announcement regarding its future policy made by any company thus far, and is especially interesting, owing to the extended controversy that has been going on regarding the merits of the four- and six-cylinder types. "Our company, like other automobile companies, is in business to make what the public wants," said Mr. Winton, "and our experience in the manufacture and sale of the "Six-Teen-Six" is convincing that every claim of advantage put forth can be demonstrated."

A NEW TYPE OF PACKARD FIVE-SEATER.

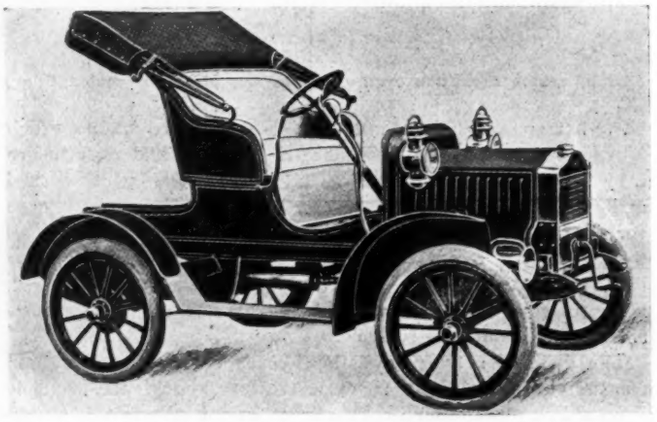
A new type of Packard car that has made its appearance is fitted with a special body made of four individual seats and a tiger seat in the rear. It is in reality a combination touring car and runabout. The four passengers are seated in front of the rear axle, and, owing to this distribution of weight, easy riding qualities are claimed for it. It is somewhat lighter than the regular type of Packard touring car.



Latest Type of Packard Body That Will Seat Five.

SPECIALTIES FOR POPULAR RUNABOUTS.

As a rule, the autoist has found that the manufacturer of accessories of various kinds—the many small things of more or less importance that are not a part of the car itself and that are not supplied by the builder, does not cater to the wants of the owner of the low-priced car to any great extent, and that as a rule many such articles are generally designed for high-priced cars. On this account, the Jenkins Specialty Manufacturing Company, Sumter, S. C., is placing on the market a line of specialties designed particularly for the five best selling makes of small cars, the Ford, Cadillac, Maxwell, Reo and Buick. It is a noticeable fact that the man who invests in a car of this kind generally does not make much attempt to keep it as clean and trim-looking as he would if it were a carriage, and it is a matter of common observation that the appearance of the average automobile and that of the horse-drawn vehicle for pleasure use are in strong contrast. To enable the owner of the small car to maintain it in better order in this respect, the makers in question make a specialty of a line of linen slip covers designed to fit the upholstery of any of the cars in question, also top hoods, running boards, inside mud splashers, under curtains, chain boots and the like, the accompanying photograph illustrating a Maxwell runabout fitted with their complete line.



Maxwell Runabout Equipped with Jenkins Specialties.

WESTERN GARAGES ARE FLOURISHING.

DES MOINES, IA., April 25.—Talk of hard times has apparently had little or no effect on the automobile business in this part of the country, for instead of plans of retrenchment for the coming season additional capital is being invested. Work has been completed on quite an ambitious addition to the garage of the Buck Automobile Company, under the supervision of its manager, W. E. Moyer. The new structure has taken the form of an L from the rear of the present building on Mulberry street, extending to Seventh street, which will give a second entrance to, and exit from, the establishment at that end. It measures 60 by 90 feet and is being constructed of brick and fireproof materials throughout, no effort being spared to make it a model of its kind. The present building already affords no less than 8,700 square feet of floor space, and with the addition in question this will be increased to 13,500 square feet. The Buck Auto Company has been handling the Pierce Arrow, Royal Tourist and Oldsmobile lines and recently added to these the Peerless and Cadillac.

Buffalo, N. Y.—A. C. Bidwell, jobber in automobile supplies, is building an absolutely fireproof garage at 72-74 Pine street, this city. The new building contains a number of special features in keeping with the progress and demand for high-class storage and attention to cars.

SELDEN LICENSEES COMBINE TO HAVE ROYALTIES REDUCED

TRENTON, N. J., April 28.—In the action of the Hartford Rubber Works, of Hartford, Conn., against the defunct Electric Vehicle Company, which is pending in the United States Circuit Court for the District of New Jersey, a petition has just been filed by the receivers, Halsey M. Barrett and Henry W. Nichols, "praying its instruction and direction with regard to the making of a new agreement with the members of the Association of Licensed Automobile Manufacturers respecting the payment of royalties required to be made upon licenses granted to them under United States Letters Patent No. 549,160, commonly known as the 'Selden patent,' and the terms under which said payment shall be made."

This is the wording of the preamble of the notice issued by the receivers, but behind it there is an interesting bit of Selden history that has been in the making for some time past. A little less than half way down its second page it reads:

"Prior to the appointment of the receivers, the members of the association had insisted that a modification of the agreements should be made which would result in a substantial reduction of the royalties required to be paid thereunder, and since the appointment of the receivers a *large majority of them have refused to make payment* on any royalties, upon the ground that such royalties were excessive and oppressive."

The italics are ours, but they explain in a few words the cause of the present move. The Selden patent forms one of the chief assets of the Electric Vehicle Company, the affairs of which are now in process of liquidation, and the members of the Licensed association have placed themselves on record as being opposed to paying the debts of the bankrupt concern through the medium of royalties. The Hartford Rubber Works Company is suing the receivers of the concern as one of its chief creditors, and as the only source of income consists of the royalties paid by members of the Licensed association, the complainant's interest in the matter is plain. As a matter of fact, however, this refusal of the licensees to pay further royalties on the old basis is not merely the outgrowth of the failure of the Electric Vehicle Company, but is the culmination of a determined effort of a number of the members of the Licensed association, reports of whose activities in this direction have cropped out more or less frequently during the past year or so. The campaign has been carried on continuously, and the fact of the E. V. Company's insolvency was seized upon as an excellent opportunity to have the matter settled without further delay. Hence the present petition of the receivers, who find themselves helpless in the premises.

The royalties payable under the Selden patent amount to 1 1-4 per cent. of the catalogue prices of the cars, except for export, in which case the royalty is one-quarter of one per cent. Of this amount three-fifths went into the treasury of the Electric Vehicle Company, from which Selden himself was reimbursed, the remaining two-fifths going to the Licensed association. To quote further from the petition, which asks a reduction of 20 per cent. in the present schedule: "This proposed agreement, if made, will reduce the royalties required to be paid by the members of the association by 20 per cent., with the further limitation that the royalties to be paid in any one year shall not exceed $250,000."

But the matter of royalties is not the only thing for which the members of the Licensed association referred to have been working. A unanimous vote of the membership has been required to admit new members in the past, in addition to which the constitution of the association requires that all members admitted shall have been in the business of manufacturing automobiles, at, or prior to, the date of the formation of the association in 1902, thus effectively barring newcomers. It has been the aim of the members in question to have the bars let down, which explains the following excerpt from the petition, where it refers to the proposed new agreement, copies of which are on file at the court, as well as the receivers' offices in Newark, N. J., and Hartford, Conn. This part reads: "It also contains certain modifications of the terms upon which new members of the association may be admitted, and surrenders to the association control of litigation to compel payment of royalties in excess of the maximum annual amount of $250,000, above referred to."

The contingency of a decision regarding the validity of the Selden patent being handed down in the interim is provided for by the following, referring to the new agreement in question:

"It also provides that should a decree be entered adjudging the Selden patent invalid, the royalty shall, pending an appeal from that decision, be paid to the trustee (the Morton Trust Company, trustee for the bondholders of the E. V. Company), to await the outcome of the appeal.

By an order of the court, granted April 25, a hearing on the petition is set for Monday, May 4, at which the creditors and stockholders of the Electric Vehicle Company may appear to argue for, or against, the granting of the petition.

FOREIGNERS MUST AWAIT THOMAS CAR AT VLADIVOSTOK

BY a decision reached by the promoters of the New York-Paris race, the foreigners now *en route* to Japan and Vladivostok will be compelled to await the arrival of the Thomas car at the latter port, so that all the contestants will again start on an equal basis. Cables have been sent to the ports for which the contestants are bound, informing them of this change of plan, and the entrants have also been notified so that they may instruct their drivers to the same effect.

In the meantime, the E. R. Thomas Motor Company has made a formal demand for the cup. According to the preamble of the latter: "No withdrawal from the race will take place, but the cup is claimed now on the rules laid down by *Le Matin* at the outset of the contest."

After relating in detail the course taken by the Thomas and the advantages gained, it continues: "The E. R. Thomas Company begs leave herewith to file an earnest protest against the action of these cars in not attempting to comply with the conditions of the race, and claims that, by failure of the others to go to Alaska, it has won the cup offered by *Le Matin*."

In stating that the car will continue, it is particularly specified that no rights to the cup are waived, and that a time allowance of at least 14 days be granted it.

AMENDED NEW JERSEY LAW IS ALREADY IN FORCE

TRENTON, N. J., April 28.—Contrary to the generally prevailing impression that the amendment to the present New Jersey Motor Vehicle law is not to go into effect until June, it is now working as hard as temporary facilities, the lack of official stationery and the new number pads will permit. Receipts for license fees are temporarily acting as licenses, and the holders are at liberty to display the new numbers on any part of the car they choose until the new pads are issued. A feature unduly oppressive is that requiring that all licenses expiring at any time before January 1, 1909, must be renewed, so that all expire December 31, 1908. More than that, no old law licenses will be transferable at a cost of one dollar, as has formerly been the case, the new owner being required to take out a license as if it were a new car.

BRIEF ITEMS OF NEWS AND TRADE MISCELLANY

The Grout Automobile Company, Orange, Mass., is running its factory on full time, and, owing to increasing trade, has largely augmented its force of factory employees.

At the sale of the assets of Leon Rubay, at his former place of business on Broadway, between Fifty-third and Fifty-fourth streets, unusually high prices were obtained, the sale being attended almost exclusively by dealers.

High Point, North Carolina, now has an automobile line pending the construction of a street car line to Mechanicsville, a distance of two miles. W. C. York has purchased a twenty-passenger car for the service.

The Ford Motor Company is making music for the masses by arranging for free distribution of the "Ford March and Two-step," composed by Harry Zickel, a ragtime author of prominence. It is also planned to supply the lines to bands and orchestras and also in the form of records for automatic piano players.

Wyckoff, Church & Partridge, eastern agents for the Stearns, gave a dinner last Saturday night at Rector's, New York, in honor of the three Stearns pilots in the Briarcliff race—Frank Leland, Barney Oldfield and Guy Vaughan. All the local and several of the factory staff attended, including Treasurer Jacobs and Superintendent Patton.

In Denver, Col., fifteen real estate men use Franklin automobiles, and, with but two exceptions, they are Type G. One man writes the Franklin people that his car has paid for itself three times over in one year, and that the real estate business in Denver could not be conducted successfully under modern conditions without the use of autos.

An order for six seven-passenger Rambler cars has been placed with the Chicago branch of Thomas B. Jeffery & Company by the Big Horn Basin Development Company, for use at Cody, Wyo. The latter company is developing 245,000 acres of farm land in Wyoming by irrigation, and will use the cars to carry prospective purchasers to and from the railway station.

"Automobile progress in the West is rapidly gaining on the East," says E. H. Broadwell, of the Fisk Rubber Company. "The beginners there seem to know more about cars, their uses and limitations, than did the average Eastern man with his first car, and this same knowledge is particularly manifest where tires are concerned. Perhaps, in the West, they are profiting by Eastern experience, but whatever the reason, they are forging ahead."

Endeavors are being made to obtain a concession from the Mexican government for a stage line between San Diego, Cal., and Enseñada, Lower California. Byron Hall is backing the project, and if the concession is granted, will establish a line of passenger and freight auto 'busses, using 75-horsepower machines capable of making the round trip in less than a day. There is no railroad connection between the points in question, the only means of communication existing at present being by steamer, which is very slow, owing to the much greater distance that must necessarily be traveled in going around the coast line.

F. M. Hoblitt, known from coast to coast as a pioneer automobile salesman, and now traveling representative for the American Locomotive automobile, is father of the following expression that is causing considerable discussion. In speaking of the six-cylinder Locomotive car he says: "It possesses energetic mechanical instinct." The argument turns upon whether it is possible for a car to be so perfectly balanced as to warrant saying that it possesses instinct.

"There has never been such development in the same length of time in the product of any industry as has been shown in automobiles," said Hugh Chalmers, president of the E. R. Thomas Detroit Company, recently, in discussing the Thomas policy of entering race meets. "This is due largely to the races and endurance runs that have been conducted. These contests have shown the manufacturers the weak points of their machines, and have enabled them to strengthen their cars and make them more reliable."

Republic tires received a well-merited compliment in a story recently told by Edgar T. Dennis on himself at the automobile club. Before undertaking a 3,000-mile Winter tour through the Appalachian mountains, Mr. Dennis gave instructions to have the tires filled with a puncture-proof compound, and to have the two spares left at home. The driver misunderstood the order, except in so far as the spares were concerned, and Mr. Dennis was surprised on his return home to find that he had been many miles from help, or even a spare tube, for several weeks, and that his self-congratulations on the unexpected resiliency of the tires had been misplaced.

The Locomobile Company of America has just delivered one of its Tye E Locomobiles to Edward Mooney, chief of the Bridegport (Conn.) fire department for use as a chief's car. A special chemical Locomobile has been in active service in Bridgeport since December last, and since that time has responded to over 100 alarms, and the steamer hose has only been on the hydrants five times in that period. Chief Mooney found that he was never getting to fires until some time after the chemical had extinguished them, and realized the need of superseding his horse conveyance with one more modern and speedier. The Locomobile people have sold a similar car to the South Park Commission of Chicago, for the use of Captain Richards. This car, however, is of the roadster type.

A side light on the expenses of a road like the Briarcliff and the immense amount of detail connected with the running of cars in these events was thrown out by a prominent oil man who visited the scene of the race yesterday. This was W. T. Kincaid, of the Harris Oil Company, of Providence, who went to New York in response to demands on the Isotta and other drivers, who asked that he personally see to the delivery of the oil which they were to use in the race. Mr. Kincaid said that after going the rounds of the training camps, he found that the cars in the race would use at least 500 gallons of oil of various kinds. When it is remembered that oil expense is one of the least of all the expenses of running a car, some idea of what the race will cost the contestants can be formed. Mr. Kincaid said that much more than 500 gallons would be bought for the race, in order to have extra supplies at the various scattered stations around the course, but that some of this would not be used and a good deal of it would be held over for later use.

NEWS ABOUT THE AGENCIES.

The Garfield Park Automobile Garage, Douglas boulevard and Harrison street, Chicago, has been appointed agent for the Grout car for that city.

The Pueblo Novelty Works has opened an up-to-date garage at 519-521 Court street, Pueblo, Col., and will handle the Rambler, Mitchell, Maxwell and Detroit electric. The new garage is to be run as a branch of the headquarters at 310 North Main street.

That Cleveland is very favorably regarded by the trade at large as a selling point is well illustrated by the way outside manufacturing concerns are opening up agencies there. Last week the Overland invaded the city, placing an agency, while the Knox, American and Overland are now figuring with the local dealers.

The National is now represented in Washington, D. C., by George Wells, who has opened a salesroom and garage at 1333 Fourteenth street, N. W. Lester D. Moore is the latest Washington dealer to locate on Fourteenth street, which is becoming known as the Capital City's automobile row. He will handle the Reo and Premier. Several dealers are bidding for the Oldsmobile agency, heretofore held by John Lutz, who has retired from the business because of ill health.

RECENT TRADE CHANGES.

The Boston branch of Charles F. Kellom & Company, of Philadelphia, makers of lubricating oils and greases, has moved from 91 Church street to larger quarters in the Motor Mart, at 87 Church street.

PERSONAL TRADE MENTION.

Elmer Apperson announces that he has engaged Herbert Lytle to drive the company's Apperson cars in all races and other contests in which the factory may desire to participate.

Secretary Johnson, of the Automobile Club of St. Paul, was in New York this week looking over the ground as to the chances of securing entries for a big track meet during the Shriners' convention in that city. He enlisted the cooperation of Fred J. Wagner in the matter.

Marcus I. Brock, who was in charge of the sales department of the Autocar Company for three years prior to December, 1905, severing his connection with that concern to become assistant manager of the Association of Licensed Automobile Manufacturers, has just returned to Ardmore, Pa., to again take up his duties in the same position. He will have associated with him in the Autocar sales department H. M. Coale and F. G. Browning, and an active campaign will be immediately undertaken. As Mr. Brock is no stranger to the Autocar, he will have no difficulty in taking up the reins just where he let go.

NEW TRADE PUBLICATIONS.

Bausch & Lomb Optical Company, Rochester, N. Y.—Under the title of a "Triple Alliance in Optics," this firm is sending out an attractive booklet showing how the three foremost investigators in the world of optics—Carl Zeiss, Jena; George N. Saegemuller, and the Bausch & Lomb Optical Company, came to be associated. "The natural drift of scientific and economic tendencies has led to the fusion of the business interests of the Bausch & Lomb Optical Company, the Bausch, Lomb, Saegemuller Company, both of Rochester, and the Carl Zeiss Optical Works, Jena," reads the foreward. "This unification is the practical expression of a desire to concentrate the knowledge, skill, experience, and energy of the leading optical firms of two continents. Under the new régime the Bausch, Lomb, Saegemuller Company becomes an integral part of the Bausch & Lomb Optical Company, losing its identity as a separate corporation. The Zeiss works become members of the new corporate organization, and the intention is to manufacture certain products of the Jena works in the United States." The new concern will be known as the Bausch & Lomb Optical Company.

Pope Manufacturing Company, Hartford, Conn.—One of the most attractive car catalogues of the season is that of the Pope-Hartford cars. It is not only an excellently executed piece of work from a typographical point of view, but it reflects the long experience that the Pope publicity forces have had in catalogue making. It is a 30-page, flexibly bound pamphlet, printed on heavy surfaced paper and strikingly illustrated in colors. This refers more particularly to the different models of the cars themselves, there being numerous other illustrations of parts and departments of the works in half-tone on tinted backgrounds. The motor as well as the other essential parts of the car are illustrated in detail, while their manufacture is described at length. The cover is attractively illustrated by two panels, one showing a party starting out in the morning, and the other, returning at night.

Halsey Auto Company, St. Louis.—What is probably the most effective way of showing second-hand automobiles to prospective purchasers at a distance, takes the form of a catalogue of used automobiles sent out by this firm. It is a work in which the photographer has played a more important part than the printer, as apart from a three-line notice over the signature of O. L. Halsey, president of the company, guaranteeing all cars offered to be exactly as represented, and the briefest possible description of the cars themselves, the photographs are allowed to do their own talking. The cars have been pictured exactly as they stand, without any attempt at making them more attractive than they are by retouching or providing an artistic background. The date of original delivery, make, model, mileage covered and the selling price, as well as the maker's price, comprise the data given below each picture.

Splitdorf Laboratory, 261-265 Walton avenue, New York.—"Automobile and Gas Engine Ignition Apparatus" is the title of a booklet now being sent out by this pioneer house in the manufacture of electrical specialties for the automobile. As Splitdorf has been a name associated with the making of electrical apparatus for half a century past, no superfluous words are wasted in introducing the reader to the subject, so that the entire Splitdorf line, including high and low-tension magnetos, dash coils, the Splitdorf synchronized multi-cylinder coil, motorcycle coils, motorcycle magnetos, Splitdorf timers and spark plugs, switches and the like, as well as illustrations and descriptions of replacement parts for everything listed, is fully covered in a 34-page pamphlet.

Thomas B. Jeffery & Company, Kenosha, Wis.—Rambler automobiles form the subject of catalogue, number 15, just issued by this old and well-known house, and it is certainly a fitting vehicle to carry the Rambler message to thousands of prospective buyers, who are looking for "the car of steady service." Just why the Rambler cars have achieved this title, is fully explained in the greatest detail in connection with the description and illustration of every essential of the car. The story is interestingly told and is enlivened by numerous illustrations of Rambler cars amid many different scenes. The cover bears the name Rambler heavily embossed in red and in the style that has long been a distinguishing feature with this house, while the frontispiece is a Rambler touring car in several colors.

Renault Freres, 1776 Broadway, New York.—Paul Lacroix, general sales manager for the Renault Freres Selling Branch for the United States and Cuba, is now distributing a facsimile of the large catalogue sent out by the home firm, translated into English. It tells of the numerous achievements that the builders of these cars have to their credit ever since 1899, besides describing in detail the numerous models that they list, ranging from a 9-horsepower, two-cylinder chassis, up to a 50-60-horsepower, six-cylinder machine. The catalogue is attractively printed on good paper and is interestingly illustrated by halftones of numerous scenes on foreign racing courses in which Renault cars figure prominently, beside which there is a number of views of the extensive works at Billancourt, France.

E. R. Thomas Detroit Company, Detroit.—"Thomas-Detroit Doings" is the title of a new periodical which will be issued by this concern henceforth, as a means of extending a helping hand to the hundreds of Thomas agents all over the country. It is a four-page sheet, measuring 9 by 12 inches, and is attractively printed in colors. The doings of the Thomas and the plans of its makers will be chronicled therein weekly, the first two issues being dated April 10 and 17. "Published by the E. R. Thomas Detroit Company to help our agents sell Thomas-Detroit Forty cars" briefly explains its mission.

Motor Car Equipment Company, 55 Warren street, New York.—The 1908 catalogue of this concern, which is the most attractive piece of trade literature of its kind that has been received in some time, is said to contain the most complete variety of automobile supplies listed. It is not the largest book of its kind by any means, but an example of its compactness is to be found in the fact that no less than eighteen different varieties of spark plugs are illustrated and described in two of its 8 by 10-inch pages. As there are 90 pages, equally condensed, the amount of matter contained will be apparent. The index is particularly complete, each article being listed by its accepted trade name, as well as the maker's name and the popularly used term.

Warner Instrument Company, Beloit, Wis.—"The Warner Autometer," surmounting an embossed illustration of the Autometer itself in gilt, which in turn is followed by the legend "Tells how fast and far," forms a catalogue cover that has become familiar. A speedmeter is an instrument that comes within the category of "apparatus of precision," and as such requires extremely accurate machinery and painstaking care to manufacture, in addition to which it must be made strong enough to withstand the jars and jolts it receives on an automobile. Just how this is done is told in detail in the Warner Instrument Company's catalogue, the story being interspersed with numerous half-tone illustrations.

Rainier Motor Car Company, New York City.—As the completion of the new Rainier plant at Saginaw, Mich., was effected not long before the issue of the Rainier catalogue for the present season, a description of this latest addition to the country's growing list of modern automobile factories has been appropriately employed in the shape of an introductory to the description of the Rainier models, which follows. Each page carries an illustration of a car, or some part, and is printed on white surrounded by a tint border, while across the top of each page, there is a panel carrying a line sketch showing Rainier cars in familiar settings, the world over.

Barrett Manufacturing Company, New York City.—Another pamphlet from this firm enclosed in a cover adorned by a most attractive view of park roadway, and emblazoned in one corner by the announcement "Tarvia, the dust layer," constitutes the latest addition to the literature of the subject which has recently made its appearance. Its purpose is to describe a new Tarvia treatment, and in doing so, excellent use is made of half-tone illustrations to show a number of specimen stretches of road that have been perfected with Tarvia.

General Automobile Supply Company, New York City.—Automobile accessories and tools of every imaginable nature and at net prices, form the contents of a new catalogue just issued by this firm. Complete lines are handled both at the down-town headquarters at the above address, as well as at the up-town store located at Broadway and Fifty-second street. Every article is illustrated and described in detail, the firm doing a large mail order business. The 1908 catalogue is a 74-page booklet, attractively printed.

Lovell, McConnell Manufacturing Company, Newark, N. J.—This concern is now sending out a booklet describing and illustrating the new "Klaxon" warning signal, of which Miller R. Hutchinson, 1 Madison Square, New York, is the patentee and inventor. The booklet describes the numerous uses to which the "Klaxon" is applicable and makes interesting reading of the process. The "Klaxon" is made in two types, one mechanical, and the other electrical, and the manner of their application is described in detail.

Mathew Strauss, 707 Main Street, Buffalo, N. Y.—A general line of automobile and gas-lighting supplies and accessories is listed in the 1908 catalogue just being sent out by this house. It is a book of 90 pages, measuring 7 by 10 inches, and contains a showing of all the standard supplies, such as lamps, horns, gas tanks, clocks, tire and robe holders, carbureters, mufflers, force-feed oilers, speedometers, shock absorbers, pumps, windshields, clothing, goggles and the like, in addition to a full line of tools.

Monarch Motor Car Company, Chicago Heights, Ill.—"Monarch 1908" is the cover caption of an attractively written booklet descriptive of the design and construction of the New Monarch car, which is being built by this firm. The entire 28 pages are given over to a detailed showing of every essential of the car, most of them being illustrated by half-tones, in addition to which there are a number of line sketches, showing the motor and change-speed gear in section, and the forward half of the chassis in plan.

Joseph Dixon Crucible Company, Jersey City, N. J.—Autoists are never permitted to forget the fact that Dixon's graphite lubricants are on deck. Their latest arguments in favor of this method of lubrication are contained in two booklets, one of which is devoted to graphite lubrication of autmobile gear boxes and transmissions and the other a compilation of "Questions and Answers on Automobile Lubrication," the cover bearing a sketch of the Sphinx with an auto in the foreground.

Canada Cycle & Motor Company, Toronto Junction, Ont.—This concern builds the Russell car and is now sending out an attractive catalogue describing the models being turned out for 1908. It is an 8 by 10, 28-page pamphlet, which is very attractively gotten up from a typographical point of view, and is devoted entirely to the business of showing how the Russell cars are made and what is used in their construction.

Detroit Lamp Company, Detroit, Mich.—Fourteen different lines in automobile searchlights, side lights and tail lamps are comprised in the Detroit company's catalogue for 1908. Each type of lamp is illustrated by half-tone engravings.

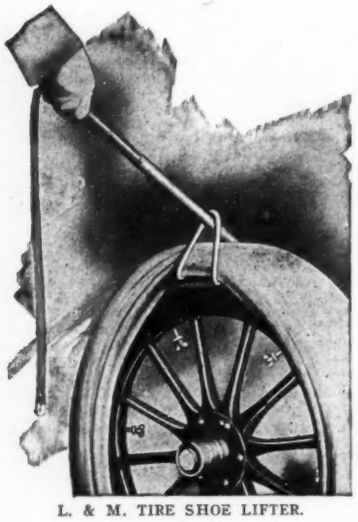
A LIVE MOTORCYCLE AGENT.

John T. Fisher, the veteran cyclist, who is now manager of the Chicago branch of the Hendee Manufacturing Company, of Springfield, Mass., makers of the Indian motorcycles, is a firm believer in the future of the power-driven two-wheeler. During the recent carnival in Chicago, the Indian headquarters, at 1251 Michigan avenue, were decorated, and Mr. Fisher was a prominent figure in the parade. A largely increased demand for motorcycles is a feature of this season's trade.

John T. Fisher.

INFORMATION FOR AUTO USERS

L. & M. Specialties.—Among the accessory specialties manufactured by the Long & Mann Company, Rochester, N. Y., for the automobile trade are the "Minute" adjuster to facilitate the removal and replacement of clincher tires, and which has



L. & M. TIRE SHOE LIFTER.

now been made so as to fit in any tool box; the "L. & M." Adjusters, designed to be used in connection with quick detachable tires and removable rims, and which are said to be the only tools made for use in connection with these tires. The

L. & M. TIRE SHOE LOOSENER.

"L. & M." Tire Shoe lifter is a new and simple tool and is designed as an adjunct to the "Minute" outfit, while the Tire Shoe loosener recently brought out is distinctly new and different from any other tool on the market, both in action and efficiency,

"PERFECT" AUTO AND CARRIAGE WASHER.

and is not only a necessity to every autoist, but to every garage and repair shop as well. The "Perfect" auto and carriage washer is also new, and represents an improvement over the ordinary type of sponge washer in that the sponge used is made of cotton mop yarn, and is in fact, a mechanical sponge. It is so constructed that the water cannot escape in the form of a stream at any point, but is very evenly distributed, while it also checks any excess pressure of the water supply and is thus economical with water, as well as in first cost.

Mather Dismountable Rim.—This is a new type of demountable rim that is the invention of Frederick R. Mather, of Wellsville, N. Y. The wheel shown in the accompanying illustration has been run several hundred miles and has stood every test most successfully. It is merely an old wood wheel cut down and fitted with the inventor's attachments, the latter's design calling for a tubular steel spoked wheel of neat design and appearance, and which

MATHER RIM AND GENERAL DETAILS.

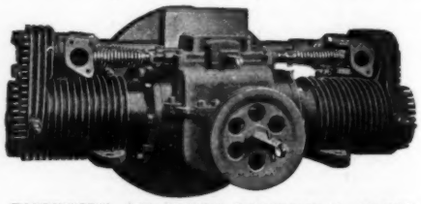
will embody several improvements not shown on the model. As will be evident from the cut, this new type of demountable rim is simple and strong in construction, making it very durable, while it is also easy to operate. In fact, it represents one of the quickest methods of changing tires on the road. The Mather rim and wheel were shown for the first time at the recent Buffalo automobile show, where they attracted considerable favorable attention. It is expected to place them on the market during the present season.

Cleveland-Canton Auto Springs.—The manufacture of springs for automobile suspension is a branch of the industry that has been developed along specialized lines, probably more than any other that has to do with the making of parts of the car. In fact, it has been brought to a point where it may well be compared to the making of watch-springs. One of the firms that has been responsible in large measure for this trend of development is the Cleveland-Canton Spring Company, Canton, O. Every possible combination of steels and alloys has been tried out to get just the right materials for successfully meeting the unusual requirements of automobile work, and this company has demonstrated the fact that while there are thousands of possible combinations of steels, that only a few can be successfully used in the manufacture of automobile springs, and an attractive booklet they have just issued, explains in simple language just why this is so, thus making it a piece of advertising literature that will be of equal interest to owner and manufacturer alike. They also illustrate a number of the various types of springs commonly used on automobiles, such as the full-elliptic, button head; semi-elliptic, scroll-end elliptic, double-scroll, three-point suspensions, commercial vehicle suspensions and the like.

"Three Ball" Gasoline Tester.—One of the greatest disadvantages of the usual type of gasoline tester or hydrometer has been that a special containing vessel was necessary to hold the latter. To overcome this, the Storage Battery Supply Company, 239 East Twenty-seventh street, New York City, have brought out an ingenious instrument, termed the "Three Ball" gasoline tester, which is shown in the accompanying illustration. By dropping this device into the tank, barrel or can of fuel to be tested and withdrawing it, the specific gravity of the gasoline may be seen at a glance. The balls are red, white and blue, and each one sinks or floats according to the character of the liquid. The instrument will pass through a 3-4-inch hole, and requires only 1-4 ounce of gasoline to fill it, while the whole instrument is so small that it can readily be carried in the waistcoat pocket.

THREE BALL TESTER.

Torbensen Motors.—With a view to producing a motor that would work all day and every day, with a minimum of trouble, the Torbensen Motor Car Company, Bloomfield, N. J., has brought out a line of air-cooled, double opposed, horizontal, four-cycle motors. They are made in two sizes, 4 3-8-inch bore by 4-inch stroke, rated at 12-horsepower, and 5 1-8-inch bore by 4 1-2-inch stroke, rated at 18-horsepower. Both are given a perfect running balance, while all bearings are of large size, the crankshafts being one-piece drop-forgings, ground on the journals, while the connecting rods are also drop-forgings of the same material. The cams and rollers are of tool-steel, hardened, while the bearings are of white brass, the main journals of the 18-horsepower motor measuring 1 3-4 inches diameter by 3 1-4 inches long, while the smaller motor has 1 5-8 by 3-inch journals. The cylinders

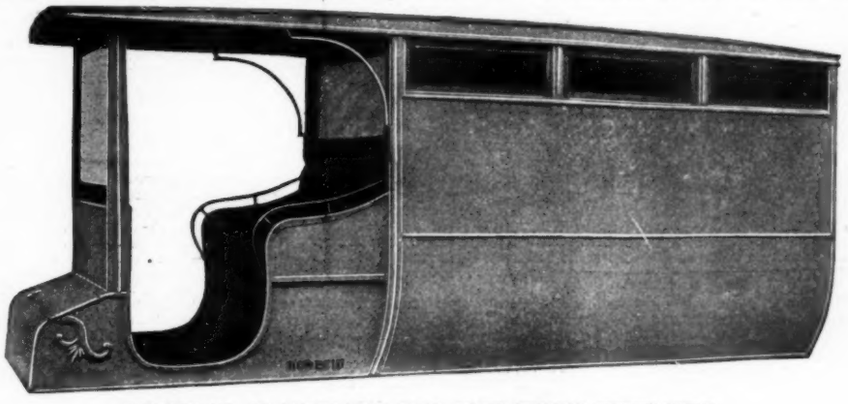


TORBENSEN AIR-COOLED HORIZONTAL MOTOR.

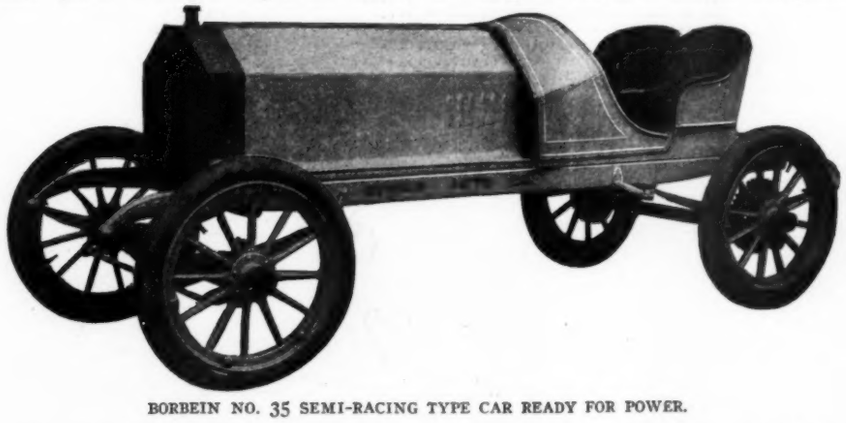
are offset so that they are directly in line with the cranks. The lubrication of all wearing parts has been worked out in the most efficient manner, while every part of the motors is made to standard gage and is interchangeable to facilitate replacements. The 12-horsepower motor is suitable for high-wheelers and light runabouts, while the larger motor is adapted for higher-powered runabouts, light touring cars and delivery wagons up to 1,500

pounds capacity. They can be made to run in either direction and their normal speed is 1,200 r.p.m. They are listed complete with carbureters, intake manifolds, spark timers, plugs, fan, oil connections and the like.

Borbein Special Bodies.—The Borbein Auto Company, 2109-2111 North Ninth street, St. Louis, have added two specialties in the shape of a complete automobile ambulance body and a roadster type to their already extensive line of running gears and bodies for the season of 1908. The ambulance is a special design and represents rather a radical departure from hitherto accepted standards in this respect, over which it is quite an improvement. For instance, ventilation is specially provided for by a row of three narrow panel openings on each side along the upper edge of the sides of the body, while the driver is protected by a glass windshield and light is admitted to the interior of the body by means of a large pane occupying the entire space above the upholstery of the driver's seat. The special 1908 roadster is of the semi-racing type, in which seats are placed at the extreme rear of the chassis, the seating capacity being limited to two. It is known as Borbein car No. 35, and consists of a running gear and body complete and ready for the power.



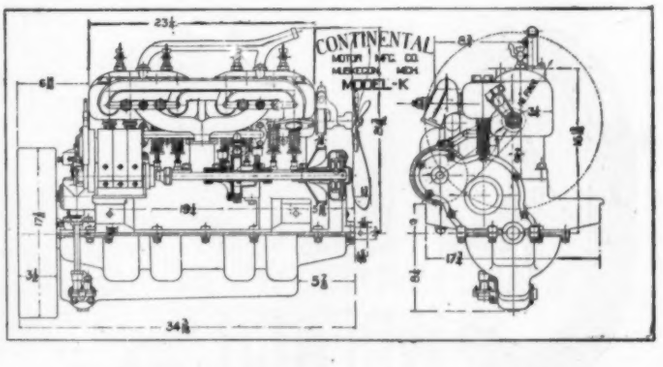
BORBEIN NO. 25 AMBULANCE BODY, WITH SPECIAL VENTILATION.



BORBEIN NO. 35 SEMI-RACING TYPE CAR READY FOR POWER.

The Fuller Car.—This is a brand new comer in the field, that hails from Angus, Neb., a place close to the geographical center of the United States. It is being made by the Angus Automobile Company, and while an assembled car, in large measure, incorporates a number of exclusive features. Its power plant consists of a four-cylinder Ruttenber motor rated at 35-40 horsepower, and coupled by means of a three-jaw clutch to a special type of change speed-gear, final drive being by propeller shaft, while all essentials of the entire transmission are exactly in line. The front axle is of the tubular type, with Timken roller-bearings, while a live rear-axle of the floating type is employed. Suspension is by means of full elliptic springs in the rear and semi-elliptics front. The wheelbase is 106 inches and the tread standard, while the complete car tips the scales at 1,900 pounds. One of the features of the car that the makers call particular attention to, is the ability to start on the high speed without any difficulty, owing to the use of a multiple disc transmission. Several types are made, including the Model A touring car, gentlemen's roadster, Model C runabout, Medium touring car, and a six-cylinder, 60-horsepower touring car.

Continental Self-Oiling Motor.—Under the title of Model K, the Continental Motor Manufacturing Company, Muskegon, Mich., is just placing on the market a simplified type of four-cylinder vertical motor. It embodies all the excellent features of design of previous models of the Continental motors, but has been designed particularly with a view to producing a motor having the least number of parts and which shall be as durable, efficient and economical as possible. The cylinders are offset, the valves all being placed on the right side, where the carbureter, timer and magneto are also located, the magneto being driven from an extension of the pump shaft. This arrangement requires the use of but three gears, thus reducing noise from that cause to a minimum. The magneto may be taken off simply by removing a single set screw and the pump is also easily removable for inspection and repair. The valve-operating mechanism is extremely simple, the plungers being of the mushroom type, and these, as well as the cams, which are integral with their shaft, being hardened and carefully ground to size. The valve timing is accurately inscribed on the flywheel periphery as a guide for retiming. Both the connecting rods and crankshaft are drop forgings of high-grade steel, the bearings and bushings being of the best white bronze. A special feature of the new motor is its automatic lubricating system, consisting of a constant oil level in the crankcase for splash oiling with an overflow to a well, from which a small gear pump driven from the timer shaft lifts the oil and forces it into the crankcase proper, thus making a constant circulation. The cylinder dimensions are 4 1-4 by 4 1-2 inches and the rating is 24-28 horsepower. The weight complete is 360 pounds.



OUTLINE SIDE AND END VIEW OF CONTINENTAL MODEL K.

Fisher Storage Battery Charger.—It is a well-established fact that the storage battery furnishes the best possible source of ignition current, and if it were not for the constant necessity of removing the battery to recharge it, this would form the ideal type of high tension ignition. To overcome this inconvenience, the A. W. Fisher Company, South Bend, Ind., have brought out their Fisher automatic storage battery charger, designed to automatically maintain the batteries of a car fully charged at all times. It is the invention of a gas engine expert who has had 20 years' experience in this field, and it is fully covered by patents. The generator may be either friction or belt driven and may be readily installed anywhere near the engine. The amount of current drawn from the batteries for ignition service is automatically replenished by the generator which supplies current to the batteries as long as the engine is running. In order to prevent the battery discharging through the generator when the engine is stopped, an automatic circuit breaker, or cut-out, is provided. This opens the circuit, the moment the engine speed drops to a point where the generator ceases to supply current to the battery, and immediately closes the circuit again on the resumption of normal speed, or the restarting of the engine after it has been idle. The device is entirely mechanical and thus positive in action. It provides a means of enjoying the reliability and plentiful supply of current given by the storage battery without the disadvantage of frequently having to recharge the latter.

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